Roun III Intestillation Tue 1/4/05 Wed 8/9/06 \$37,500.00 \$8.00 \$500.72.80 \$505.72.80 \$50
Wed 3/106
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Beginning of Runlib Shutdown Wed 3/1/06 Wed 3/1/06 \$0.00 \$0.
Notes Note
Wilso Definition- Milestone Travellation of Rurilla Installation & Technical Commissioning Tue 1/4/05 Tue 5/30/06 \$12,000.00 \$0.00 \$145,536.80 \$157,536.80 The summarity size covers the effort to install the LD citizen tracker for the DO Ruri th spagnate project. The detector will augment the existing allicon microstrip tracker currently in use for Ruri IIa, and it assumes the use of the Vicor LV supplies and adapter cards paus \$5VA readouts for the LD charmese, and it assumes the use of 80-conductor cables for the 300V HV supply. The summarity size covers the effort to install the LD citizen tracker for the DO Ruri th separate project. The detector will augment the existing allicon microstrip tracker currently in use for Ruri IIa, and it assumes the use of the Vicor LV supplies and adapter cards paus \$5VA readouts for the LD charmese, and it assumes the use of 80-conductor cables for the 300V HV supply. The summarity size covers the effort to install the LD citizen tracker for the DO Ruri th suppract project. The detector will augment the existing allicon microstrip tracker currently in use for Ruri IIa, and it assumes the use of the Vicor LV supplies and adapter cards, children currently in use for Ruri IIa, and it assumes the use of the Vicor LV supplies and adapter cards, children and dry gas systems. transportation and allignment finances, temperature monitoring that the supplies and adapter cards and project projects and an adapter cards. children and dry gas systems, transportation and allignment finances, temperature monitoring and the Vicor LV systems for LD The 24-30-20 Section Sectio
Layer O Silicon Installation & Technical Commissioning Tue 1/4/05 Tue 5/30/06 \$12,000.00 \$0.00 \$145,536.80 \$157,536.80 \$157,536.80 \$157,536.80 \$158 Definition: This summary task includes activities that the LO silicon tracker for the DO Ravi this upgrade project. The detector will augment the existing silicon microstrip tracker currently in use for Run Itia, and it assumes the use of the Vicor LV supplies and supplies and supplies that the page of the Colorable state of the Colorable state of the Colorable for the Colorable state of the Colorable state of the Colorable for the Colorable state of the Colorable sta
Layer 0 Silicon Installation & Technical Commissioning Tue 14/05 Tue 5/30/06 S12,000.00 \$0.00 \$145,536.80 \$157,536.80 \$157,536.80 \$157,536.80 \$157,536.80 \$157,536.80 \$157,536.80 \$157,536.80 \$158 summary task covers the effort to install the LD elicon tracker for the DO Run Illo upgrade project. The detector will augment the existing allicon microstrip tracker currently in use for Run Illa, and it assumes the use of the Vicor LV supplies and subject to the LD districts the LD districts to the LD districts the United States and States
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Neese VIVES Definition- This summary task includes activities that must take place to ensure that all infrastructure components required for the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring through the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring through the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring through the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring through the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring through the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring through the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring through the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring through the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring through the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring through the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring through the Run II b align voltage from t
This summary task overes the effort to install the LD silicon function for the DO Run Illa, and it assumes the use of the Vicor LV supplies and adapter cards plus SVMF anders by last Vicor LV supplies and adapter cards plus SVMF and plus for the 200 kH supply. 2.1.1 Prepare Silicon Infrastructure Tue 1/4/05 Mon 9/19/05 \$12,000.00 \$0.00 \$24,362.60 \$36,362.60 \$36,362.60 \$36,362.60 \$36,362.60 \$36,362.60 \$36,362.60 \$36,362.60 \$36,000 \$30.
adapter cards julis SVA4 readouts for the 1D channels, and it assumes the use of 80-conductor cables for the 200V HV supply. Tue 1/4/05 Mon 9/19/05 \$12,000.00 \$0.00 \$24,362.60 \$36,362.60 ***MSS Definition*** This summy task includes activities that must take place to ensure that all infrastructure components required for the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitorir than 10 minum task includes activities that must take place to ensure that all infrastructure components required for the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitorir than 10 minum task includes activities that must take place to ensure that all infrastructure components required for the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitorir than 10 minum task includes activities that must take place to ensure that all infrastructure components required for the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitorir than 10 minum task includes and the situation of the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitorir than 10 minum task includes and the situation of the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitorir than 10 minum task includes and the situation of the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitorirs and the required than 10 minum task includes and the Run II b allicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitorirs and the required than 10 minum task includes and task includes and task includes and
Prepare Silicon Infrastructure Tue 1/4/05 Mon 9/19/05 \$12,000.00 \$0.00 \$24,362.60 \$36,362.60 \$3
Notice WISD Definition- This summary shirt includes activities that must take place to ensure that all infrastructure components required for the Run II b silicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fistures, temperature monitoring that and LV systems) are in hand, prior to shutdown. 2.1.1 Prepare New HV Power Supply Systems for LO Tue 1/4/05 Thu 7/21/05 \$5,000.00 \$0.00 \$7,544.00 \$12,544.00
Notice WISD Definition- This summary shirt includes activities that must take place to ensure that all infrastructure components required for the Run II b silicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fistures, temperature monitoring that and LV systems) are in hand, prior to shutdown. 2.1.1 Prepare New HV Power Supply Systems for LO Tue 1/4/05 Thu 7/21/05 \$5,000.00 \$0.00 \$7,544.00 \$12,544.00
This summary task includes activities that must take place to ensure that all infrastructure components required for the Run II b silicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring HV and to systems, are in hand in the production of the Run II b silicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring HV and to systems and the production of the Run II b silicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring HV and the Run II b silicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring HV and the Run II b silicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring HV and the Run II b silicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring HV and the Run II b silicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring HV and the Run II b silicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring HV and the Run II b silicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring HV and the Run II b silicon (cables, adapter cards, chiller and dry gas systems, transportation and alignment fixtures, temperature monitoring that the systems are the Run II b silicon (cables, adapter vivor, and the Run II b silicon (cables, adapter vivor, and the Run II b silicon (cables, adapter vivor, and the Run II b silicon (cables, child in the Run II b silicon (cabl
2.1.1 Prepare New HV Power Supply Systems for L0 10 Prepare New HV Power Supply Systems for L0 11 Prepare New HV Power Supply Systems for L0 12 Prepare New HV Power Supply Systems for L0 13 Prepare New HV Power Supply Systems for L0 14 Prepare New HV Power Supply Systems for L0 15 Prepare New HV Power Supply Systems for L0 16 Prepare New HV Power Supply Systems for L0 17 Prepare New HV Power Supply Systems for L0 17 Prepare New HV Power Supply Systems for L0 18 Prepare New HV Power Supply Systems for L0 18 Prepare New HV Power Supply Systems for L0 17 Prepare New HV Power Supply Systems for L0 17 Prepare New HV Power Supply Systems for L0 18 Prepare New HV Power Supply Systems for
Prepare New HV Power Supply Systems for L0
10 Resource Name Units Cost Baseline Cost Act Cost Rent Cost Work Ort. Work Baseline Work Act Work Rent Work
11 Physicist 25% 50.00 \$0.00
Mamady 5,000 \$5,000.00 \$0.0
Second
72 John Anderson 25% \$0.00 \$
WBS Definition- This task provides for the development of the high voltage fanouts for the L0 channels [1/05 the HV crates, mother boards, pods, and crate PS, are in hand. The pods are tested, the crate PS is tested, the MCH2 rack layout is done, the fanouts: 96 SHV cables for MCH (pod fanout) must be purchased. M&S BOE- Added HV channels may be required in MCH2, but no additional 50-conductor (MCH Platform) nor 34-conductor cables are required for MCH2. Labor BOE- Two man-months of physicst time and the like for Electrical Engineer are required to complete this task. Lynn Bagby and John Foglesong are the preferred personnel 2.1.2 Refurbish dry gas system Passource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ort. Work Rem. Work Rem. Work
Two man-months of physicst time and the like for Electrical Engineer are required to complete this task. Lynn Bagby and John Foglesong are the preferred personnel 2.1.2 Refurbish dry gas system Thu 6/23/05 Thu 7/7/05 \$500.00 \$0.00 \$1,528.60 \$2,028.60 \$2,028.60 \$2,028.60 \$2,028.60 \$2,028.60 \$2,028.60 \$2,028.60 \$3.79.60 \$3.79.60 \$3.79.60 \$3.79.60 \$3.79.60 \$3.79.60 \$0.00 \$0.00 \$3.79.60 \$0.00 \$
ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work 39 SeniorMechErgF 10% \$379.60 \$0.00 \$379.60 \$0.00 \$379.60 \$0.00 \$140.00 \$0.00 \$8.h 0.h 0.h 0.h 8.h 0.h 40 SeniorMechTechF 50% \$1,149.00 \$0.00 \$1,149.00 \$0.00 \$1,149.00 \$0.00 \$1,149.00 \$0.00 \$1,149.00 \$0.00 \$1,00 \$1,00 \$0.00 \$1,00 \$1,00 \$0.00 \$1,00
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48 MandS 500 \$500.00 \$0.
Notes WBS Definition- This task provides for required periodic maintenance of the dry gas system: change of dessicant in the dryers, and any other needed preventive maintenance . M&S BOE- Dessicant and other small items, \$500. Labor BOE- The estimated labor requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements are based on the preferred electrical engineer, Bill Cooper the preferred physicist, and Russ Rucinski the preferred mechanical engineer. 2.1.3 Interface L0 Temp Monitoring System to DMACS Tue 7/5/05 Mon 7/18/05 \$6,000.00 \$0.00 \$760.00 \$6,760.00
WBS Definition- This task provides for required periodic maintenance of the dry gas system: change of dessicant in the dryers, and any other needed preventive maintenance. M&S BOE- Dessicant and other small items, \$500. Labor BOE- The estimated labor requirements are based on RunllA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements are based on RunllA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements are based on RunllA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, and 2w of a physicist to guide the task, are requirements are to guide the task. 2.1.3 Interface L0 Temp Monitoring System to DMACS Tue 7/5/05 Mon 7/18/05 \$6,000.00 \$0.00 \$760.00 \$6,760.00
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M&S BOE- Dessicant and other small items, \$500. Labor BOE- The estimated labor requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, and 2w of a physicist to guide the task, are requirements. 2.1.3 Interface L0 Temp Monitoring System to DMACS Tue 7/5/05 Mon 7/18/05 \$\$6,000.00 \$\$0.00 \$\$0.00 \$\$760.00 \$\$6,760.00
Dessicant and other small items, \$500. Labor BOE- The estimated labor requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical engineer, and 2w of a mechanical engineer, and 2w of a physicist to guide the task, are requirements are system.
Labor BOE- The estimated labor requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements are based on RunlIA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements.
The estimated labor requirements are based on RunllA experience with the dry air system. One full time mechanical technician, plus 2w of a mechanical engineer, 2 weeks of an electrical engineer, and 2w of a physicist to guide the task, are requirements is set at 150%. Dan Markley is the preferred electrical engineer, Bill Cooper the preferred physicist, and Russ Rucinski the preferred mechanical engineer. 2.1.3 Interface L0 Temp Monitoring System to DMACS Tue 7/5/05 Mon 7/18/05 \$6,000.00 \$0.00 \$760.00 \$6,760.00
Contingency is set at 150%. Dan Markley is the preferred electrical engineer, Bill Cooper the preferred physicist, and Russ Rucinski the preferred mechanical engineer. 2.1.3 Interface L0 Temp Monitoring System to DMACS Tue 7/5/05 Mon 7/18/05 \$6,000.00 \$0.00 \$760.00 \$6,760.00
.2.1.3 Interface L0 Temp Monitoring System to DMACS Tue 7/5/05 Mon 7/18/05 \$6,000.00 \$0.00 \$760.00 \$6,760.00
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13 CompProfF 25% \$760.00 \$0.00 \$570.00 \$190.00 20 h 0 h 0 h 15 h 5 h
48 MandS 6,000 \$6,000.00 \$0.00 \$0,000 \$0.00 0 4,500 1,500
Notes WBS Definition-
This task provides for the interfacing of the L0 Temp Mon system to the Cryo Computer Control system: procure AD modules, test modules, insert device names in tables, lay out operator's console screens. M&S BOE-

Labor BOEThe estimated labor requirements are based on RunIIA experience, where hundreds of channels of temperature monitoring were interfaced to the DMACS system. Dan Markley is the appropriate computer specialist.

WBS		Name							Start	Fir	nish	M&S EQ	M&S Labor	FNAL Labor	Total Cost	
1.5.2.1.4		Label and Test	t TempMe	on Cables	3			Mon 6	/20/05	Tue 6/21	1/05	\$500.00	\$0.00	\$240.00	\$740.00	
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work				
	11	PhysicistF	10%	\$0.00	\$0.00	\$0.00	\$0.00	1.6 h	0 h	0 h	0.8 h	0.8 h				
	38	SeniorElecTechF	50%	\$240.00	\$0.00	\$120.00	\$120.00	8 h	0 h	0 h	4 h	4 h				
	48	MandS	500	\$500.00	\$0.00	\$500.00	\$0.00	500		0	250	250				
	55	Linda Bagby	10%	\$0.00	\$0.00	\$0.00	\$0.00	1.6 h	0 h	0 h	0.8 h	0.8 h				

Notes
WBS Definition-

This task tests, labels and bundles the temperature monitoring cables for the L0 detector (DMarkley chassis in Platform to horseshoes).

M&S BOE-

\$500 for cables

Labor BOE-

Testing, labeling, bundling effort: 16 (8 per end) 22-Ga temperature monitoring cables. Labeling & Testing: Glenair tester permits testing of 1 cable in 5--10 minutes. Labeling and bundling make the task a 2 day's job.

1.5.2.1.5		Complete L0 C	Cables, Co	ntroller for	LV PS for L0			Thu 6/30	0/05	Thu 7/28/0	5	\$0.00	\$0.00	\$4,800.00	\$4,800.00
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work			
	11	PhysicistF	20%	\$0.00	\$0.00	\$0.00	\$0.00	32 h	0 h	0 h	11.2 h	20.8 h			
	38	SeniorElecTechF	100%	\$4,800.00	\$0.00	\$1,680.00	\$3,120.00	160 h	0 h	0 h	56 h	104 h			
	55	Linda Bagby	20%	\$0.00	\$0.00	\$0.00	\$0.00	32 h	0 h	0 h	11.2 h	20.8 h			

Notes

WBS Definition-

Prepare LV cables and CAN controller software for new LVPS for L0.

M&S BOE-

NA.

One man-months of physicst time and the like for Electrical Engineer are required to complete this task. Lynn Bagby and John Foglesong are the preferred personnel.

1.5.2.1.6		Modify Runlla	L3/Offlin	e Silicor	Software -FN	IAL		Wed	1/5/05	Fri 7/	8/05	\$0.00	\$0.00	\$0.00	\$0.00	
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work				
	11	PhysicistF	100%	\$0.00	\$0.00	\$0.00	\$0.00	1,040 h	0 h	0 h	676 h	364 h				
	89	Shaoua Fu	100%	\$0.00	\$0.00	\$0.00	\$0.00	1,040 h	0 h	0 h	676 h	364 h				

This task modifies the L3/offline software needed for the L0 silicon system at DAB. Included is simulation(D0gstar), unpacking and calibration, cluster reconstruction, L3 algorithms, track resonstruction(RECO), monitoring (Examine, event display).

M&S BOE-

NA

Labor BOE-

The effort estimates are made by assessing the time needed to make a series of well-defined modifications to the existing Run IIa software. The effort estimates and capable individuals are: simulation 8mw (Chabalina), unpacking and calibration 4 mw (Kulik, Zdrazil), cluster reconstruction 8mw (Barberis, Kulik), L3 algorithms 3mw (Illingworth), track reconstruction 6mw (Kulik, Khanov, Borisov), monitoring 12mw (Chabalina, Hesketh, Dean).

S. Fu (postdoc).

1.5.2.1.7		Modify Runlla L	3/Offline	Silicon S	Software - U			Wed 1	/5/05	Fri 7/8/	05	\$0.00	\$0.00	\$0.00	\$0.00	
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work				
	12	PhysicistU	200%	\$0.00	\$0.00	\$0.00	\$0.00	2,080 h	0 h	0 h	1,352 h	728 h				
	88	Alexei Melnitchouk	100%	\$0.00	\$0.00	\$0.00	\$0.00	1,040 h	0 h	0 h	676 h	364 h				

This task modifies the L3/offline software needed for the L0 silicon system at DAB. Included is simulation(D0gstar), unpacking and calibration, cluster reconstruction, L3 algorithms, track resonstruction(RECO), monitoring (Examine, event display).

M&S BOE-

Labor BOE-

The effort estimates are made by assessing the time needed to make a series of well-defined modifications to the existing Run IIa software. The effort estimates and capable individuals are: simulation 8mw (Chabalina), unpacking and calibration 4 mw (Kulik, Zdrazil), cluster reconstruction 8mw (Barberis, Kulik), L3 algorithms 3mw (Illingworth), track reconstruction 6mw (Kulik, Khanov, Borisov), monitoring 12mw (Chabalina, Hesketh, Dean).

Alex Melnitchouk (U. Miss) postdoc, leads; Timwar ? grad student UIC, ?grad student KU

1.5.2.1.8 **Prepare Safety and PORC documentation** Tue 9/6/05 Mon 9/19/05 \$0.00 \$0.00 \$9,490.00 \$9,490.00

WBS Definition-

WBS M&S EQ M&S Labor Name Start Finish FNAL Labor **Total Cost**

"Prepare Safety and PORC documentation" continued

This task provides effort the preparation of any required safety documentation (e.g. extended silicon HV and LV systems, Be beampipe handling procedures, etc.) and drafts the necessary PORC's so that only final "walk-thrus" are needed as installation is completed. The task is scheduled to begin somewhat arbitrarily 1 year before the beginning of the shutdown.

Beampipe leak check procedures. (Russ to review 2004 SNEG item)

M&S BOS-

None.

Labor BOE-

Ongoing physicist and engineering effort required to assure paperwork completion in a timely maner. Rich Smith, Russ Rucniski, Bill Cooper, Lyn Bagby, Youri Orlov, Dan Marlkey, are the preferred physicsts and engineers to prepare the documentation.

1.5.2.1.8.1 Prepare L0 Si Cooling Safety and PORC Documentation Tue 9/6/05 Mon 9/19/05 \$0.00 \$0.00 \$3,796.00 \$3,796.00 Resource Name Baseline Cost Act. Cost Work Ovt. Work Baseline Work Rem. Work ID Units Cost Rem. Cost Act. Work PhysicistF SeniorMechEnaF 10% 100% \$0.00 \$3.796.00 \$0.00 \$0.00 11 39 \$0.00 \$0.00 8 h 0 h 0 h 0 h 0 h 0 h 0 h 8 h \$3,796.00 80 h \$0.00 80 h 58 Bill Cooper 10% \$0.00 \$0.00 \$0.00 \$0.00 0 h 0 h 0 h 8 h 8 h 100% \$0.00 \$0.00 \$0.00 0 h Dan Olis \$0.00 80 h 0 h 0 h 80 h

WBS Definition-

This task provides effort for the preparation of the Layer Zero Si cooling system safety documentation and PORCS, including "walk-thrus" required for permission to operate the system.

M&S BOS-

None.

Labor BOE-

Based on Runlla experience and considering that review/updating of existing documentation constitutes the bulk of the task, two weeks time by an mechanical engineer, and supervision by a physicist are required for this task. Bill Cooper and Dan Olis are the preferred personnel.

1.5.2.1.8.2		Prepare L0 Si	Dry Gas S	Safety and	PORC Docum	entation		Tue 9/	/6/05	Mon 9/19/0	05	\$0.00	\$0.00	\$3,796.00	\$3,796.00
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work			
	11	PhysicistF	10%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h			
	39	SeniorMechEngF	100%	\$3,796.00	\$0.00	\$0.00	\$3,796.00	80 h	0 h	0 h	0 h	80 h			
	58	Bill Cooper	10%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h			
	94	Dan Olis	100%	\$0.00	\$0.00	\$0.00	\$0.00	80 h	0 h	0 h	0 h	80 h			

This task provides effort for the preparation of the Layer Zero Si dry gas system safety documentation and PORCS, including "walk-thrus" required for permission to operate the system.

M&S BOS-

None.

Labor BOE-

Based on Runlla experience and considering that review/updating of existing documentation constitutes the bulk of the task, two weeks time by an mechanical engineer, and supervision by a physicist are required for this task. Bill Cooper and Dan Olis are the preferred personnel.

1.5.2.1.8.3		Prepare Beam	npipe Har	ndling Sa	afety Documer	ntation		Tu	e 9/6/05	Mon 9	/19/05	\$0.00	\$0.00	\$0.00	\$0.00
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work			
•	11	PhysicistF	100%	\$0.00	\$0.00	\$0.00	\$0.00	80 h	0 h	0 h	0 h	80 h			
	61	Rich Smith	100%	\$0.00	\$0.00	\$0.00	\$0.00	80 h	0 h	0 h	0 h	80 h			

WBS Definition-

This task provides effort for the preparation of the beryllium beampipe safety documentation

M&S BOS-

None.

Based on Runlla experience and considering that review/updating of existing documentation constitutes the bulk of the task, one week time by a physicist is required for this task. Rich Smith is the preferred personnel.

1.5.2.1.8.4		Prepare Tevati	ron Beam	pipe Leak	Checking Prod	cedure		Tue 9	/6/05	Mon 9/19/	05	\$0.00	\$0.00	\$1,898.00	\$1,898.00	
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work				
	39	SeniorMechEngF	50%	\$1,898.00	\$0.00	\$0.00	\$1,898.00	40 h	0 h	0 h	0 h	40 h				

This task provides effort for the preparation of the Tevatron beampipe leak checking safety documentation.

M&S BOS-

None.

WBS		Name						Start	Finis	h M	l&S EQ	M&S Labor	FNAL Labor	Total Cost	
Prepare To		Beampipe Leak	Checking	Procedur	e" continued										
	Notes														
	Labor BC														
	Based or	n Runiia experience	and consid	ering that rev	ew/updating of e	xisting docum	entation consi	itutes the bulk of the	e task, one week time by	an engineer is	requirea for tr	ils task. Russ Ruci	nski is the preferred per	sonnei.	
.5.2.1.8.5		Silicon Safety	and POR	C Docume	entation Com	nleted		Mon 9/19/05	Mon 9/19/0	5	\$0.00	\$0.00	\$0.00	\$0.00	
.0.2.1.0.0	Notes	Officer Garcty	ana i oit	o bocaine	mation com	picted		111011 3/13/03	111011 3/13/0	•	ψ0.00	ψ0.00	ψ0.00	ψ0.00	
	WBS Def	finition- e - All safety and PC	DPC docume	ntation for D	unlib are complet										
	Milestone	e - All Salety and PC	ORC docume	manon ioi K	unio are complet	e.									
.5.2.1.9		Silicon Infrast	ructure P	repared				Mon 9/19/05	Mon 9/19/0	5	\$0.00	\$0.00	\$0.00	\$0.00	
	Notes										• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	WBS Det		equired by t	ne silicon (cal	oles chiller and n	ining dry gas	system HV a	nd I V systems inst	allation fixtures) is comp	ete					
					-		System, TTV a				***	40.00	*** *** ***	A40.007.00	
1.5.2.2		Remove Outer					D 04	Wed 3/1/06	Thu 3/9/0		\$0.00	\$0.00	\$13,667.20	\$13,667.20	
	39	Resource Name SeniorMechEngF	Units 100%	Cost \$2,467.40	Baseline Cost \$0.00	Act. Cost \$0.00	Rem. Cost \$2,467.40	Work Ovt. Wo	0 h 0 h	Act. Work	Rem. Work 52 h	-			
		Russ Rucinski	100%	\$0.00	\$0.00	\$0.00	\$0.00	52 h	0 h 0 h	0 h	52 h				
	Notes WBS Def	finition-													
	This sum	nmary task makes C												es and backfills Tev beam	
	purge line (scaffolds	es to crosses at qua s, lighting, masks to	ads, remove: protect CF1	s FPD veto co fibers), and	ounters on SNEG begins silicon wa	pipes, remov rmup.	es Quad bear	npipe accessories a	nd SNEG's, measures b	eampipe interio	ors, installs col	lapsible beampipe,	opens CF's, opens EC's	s, and prepares the CC-EC	C gaps for acce
.5.2.2.1							<u> </u>	Wod 2/4/06	Wod 2/4/0		ФО ОО	\$0.00	COO 40	¢coo 40	
.5.2.2.1		Perform CH Ra Resource Name	Units		•			Wed 3/1/06 Work Ovt. Work	Wed 3/1/0 Baseline Work		\$0.00 em. Work	\$0.00	\$689.40	\$689.40	
		SurveyorF	300%	\$689.40	\$0.00	\$0.00	\$689.40	24 h 0		0 h	24 h				
	Notes														
	WBS Det								" (FE) 05						
			red rad surv	ey of the collis	sion hall before g	eneral person	nel access pe	rmitted, makes stick	mike survey of EF's, CF	S.					
	This task	performs the require	red rad surv	ey of the colli	sion hall before g	eneral person	nel access pe	rmitted, makes stick	mike survey of EF's, CF	S.					
	This task M&S BO NA	performs the requi	red rad surv	ey of the colli	sion hall before g	eneral person	nel access pe	rmitted, makes stick	mike survey of EF's, CF	s.					
	This task M&S BOINA Labor BO	performs the require-			-	·			mike survey of EF's, CF	s.					
	This task M&S BOINA Labor BO	performs the requi			-	·			mike survey of EF's, CF	s.					
	This task M&S BO NA Labor BO Runlla ex	c performs the require- E- DE- xperience where the	ese tasks we	re done on s	-	·		for effort.							
	This task M&S BO NA Labor BC Runlla ex	c performs the requirements the requirements of the performs the requirements of the r	ese tasks we	re done on so	everal occasions,	forms the bas	sis of estimate	for effort. Thu 3/2/06	Thu 3/2/0	6	\$0.00	\$0.00	\$649.40	\$649.40	
	This task M&S BO NA Labor BC Runlla ex	experiorms the requirements E- DE- Experience where the Copen forward in Resource Name	ese tasks we nuon shie <i>Units</i>	re done on so ds, EF's Cost	everal occasions, Baseline Cost	forms the bas	sis of estimate	for effort. Thu 3/2/06 Work Ovt. W.	Thu 3/2/0 ork Baseline Work	6 Act. Work	Rem. Work	\$0.00 -	\$649.40	\$649.40	
	This task M&S BOINA Labor BC Runlla ex	E- DE- xperience where the Open forward in Resource Name SeniorMechTechF	nuon shie Units 100% 400%	ds, EF's Cost \$189.80 \$459.60	Baseline Cost \$0.00 \$0.00	Act. Cost \$0.00 \$0.00	Rem. Cost \$189.80 \$459.60	for effort. Thu 3/2/06 Work Ovt. W. 4 h 16 h	Thu 3/2/0 ork Baseline Work 0 h 0 h 0 h	6 Act. Work 0 h 0 h	Rem. Work 4 h 16 h	\$0.00	\$649.40	\$649.40	
	This task M&S BOINA Labor BC Runlla ex	E- DE- E- Copen forward in Resource Name SenionMechEngF	nuon shie Units 100%	ds, EF's	everal occasions, Baseline Cost \$0.00	forms the base	sis of estimate Rem. Cost \$199.80	for effort. Thu 3/2/06 Work Ovt. W. 4 h	Thu 3/2/0 ork Baseline Work 0 h 0 h	6 Act. Work 0 h	Rem. Work	\$0.00 -	\$649.40	\$649.40	
.5.2.2.2	This task M&S BOINA Labor BC Runlla ex	Center of the requirement of the	nuon shie Units 100% 400%	ds, EF's Cost \$189.80 \$459.60	Baseline Cost \$0.00 \$0.00	Act. Cost \$0.00 \$0.00	Rem. Cost \$189.80 \$459.60	for effort. Thu 3/2/06 Work Ovt. W. 4 h 16 h	Thu 3/2/0 ork Baseline Work 0 h 0 h 0 h	6 Act. Work 0 h 0 h	Rem. Work 4 h 16 h	\$0.00 -	\$649.40	\$649.40	
1.5.2.2.2	This task M&S BOI NA Labor BC Runlla ex ID 39 40 105 Notes WBS Del	c performs the require. E- DE- xperience where the company of t	nuon shie Units 100% 400% 100%	ds, EF's Cost \$189.80 \$459.60 \$0.00	Baseline Cost \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00	Rem. Cost \$189.90 \$459.60 \$0.00	Thu 3/2/06 Work Ovt. W. 4 h 16 h 4 h	Thu 3/2/0 ork Baseline Work 0 h 0 h 0 h	6 Act. Work 0 h 0 h 0 h	Rem. Work 4 h 16 h 4 h	\$0.00	\$649.40	\$649.40	
1.5.2.2.2	This task M&S BOINA Labor BC Runlla ex ID 39 40 105 Notes WBS Det This task M&S BOI	Certorms the requirement of the certor of th	nuon shie Units 100% 400% 100%	ds, EF's Cost \$189.80 \$459.60 \$0.00	Baseline Cost \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00	Rem. Cost \$189.90 \$459.60 \$0.00	Thu 3/2/06 Work Ovt. W. 4 h 16 h 4 h	Thu 3/2/0 ork Baseline Work 0 h 0 h 0 h 0 h 0 h	6 Act. Work 0 h 0 h 0 h	Rem. Work 4 h 16 h 4 h	\$0.00	\$649.40	\$649.40	
1.5.2.2.2	This task M&S BOINA Labor BC Runlla ex ID 39 40 105 Notes WBS Det This task	Certorms the requirement of the certor of th	nuon shie Units 100% 400% 100%	ds, EF's Cost \$189.80 \$459.60 \$0.00	Baseline Cost \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00	Rem. Cost \$189.90 \$459.60 \$0.00	Thu 3/2/06 Work Ovt. W. 4 h 16 h 4 h	Thu 3/2/0 ork Baseline Work 0 h 0 h 0 h 0 h 0 h	6 Act. Work 0 h 0 h 0 h	Rem. Work 4 h 16 h 4 h	\$0.00	\$649.40	\$649.40	
.5.2.2.2	This task M&S BOINA Labor BC Runlla ex ID 39 40 105 Notes WBS Del This task M&S BOINA Labor BC	Copen forward in Resource Name SeniorMechTechF Jim Fagan finition-copens forward mu E-DE-	nuon shie Units 100% 400% 100% on shielding	ds, EF's Cost \$189.80 \$459.60 \$0.00 (clamshells a	Baseline Cost S0.00 \$0.00 \$0.00 and noses) and re	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$189.80 \$459.60 \$0.00	for effort. Thu 3/2/06 Work Ovt. W. 4 h 16 h 4 h 4 h urvey of exposed be	Thu 3/2/0 ork Baseline Work 0 h 0 h 0 h 0 h 0 h	6 Act. Work 0 h 0 h 0 h	Rem. Work 4 h 16 h 4 h	\$0.00 -	\$649.40	\$649.40	
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.5.2.2.2	This task M&S BOI NA Labor BC Runlla ex ID 39 40 105 Notes WBS Det This task M&S BOI NA Labor BC Runlla ex	Copen forward in Resource Name SeniorMechTechF Jim Fagan finition-copens forward mu E-DE-	nuon shie Units 100% 400% 100%	ds, EF's	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 and noses) and re	Act. Cost \$0.00 \$0.00 \$0.00 \$tracts bridges	Rem. Cost \$189.80 \$459.60 \$0.00 s, makes rad s	for effort. Thu 3/2/06 Work Ovt. W. 4 h 16 h 4 h 4 h urvey of exposed be	Thu 3/2/0 ork Baseline Work 0 h 0 h 0 h 0 h 0 h	6 Act. Work 0 h 0 h 0 h 0 h	Rem. Work 4 h 16 h 4 h	\$0.00	\$649.40 \$1,298.80	\$649.40 \$1,298.80	
.5.2.2.2	This task M&S BOINA Labor BC Runlla ex ID 39 40 105 Notes WBS Del This task M&S BOINA Labor BC Runlla ex	Copen forward in Resource Name SeniorMechTechF Jim Fagan finition- copens forward multiple. DE- E- E	nuon shie Units 100% 400% 100% on shielding ese tasks we Units Units	ds, EF's Cost \$189.80 \$459.60 \$0.00 (clamshells a	Baseline Cost \$0.00 \$0.00 \$0.00 and noses) and reserveral occasions, beampipes to Baseline Cost	Act. Cost \$0.00 \$0.00 \$0.00 \$tracts bridges forms the base Calorimete Act. Cost	Rem. Cost \$189.80 \$459.60 \$0.00 s, makes rad s sis of estimate REM. Cost	for effort. Thu 3/2/06 Work Ovt W 4 h 16 h 4 h urvey of exposed be for effort. Thu 3/2/06 Work Ovt W	Thu 3/2/0 ork Baseline Work 0 h 0 h 0 h 0 h oh eampipes and quads, an	6 Act. Work Oh Oh Oh Oh Act. Work	Rem. Work 4 h 16 h 4 h 8 S EF's.	-			
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1.5.2.2.2	This task M&S BOINA Labor BC Runlla ex ID 39 40 105 Notes WBS Del 39 40 105 Notes WBS Del 39 40 105 Notes WBS Del 39 40 105 39 40 105 39 40 105 39 40 105 39 40 105 39 40 105 39 40 105 39 40 105 80 WBS Del WBS Del	Copen forward in Resource Name SeniorMechTech Jim Fagan Remove BLM's Resource where the SeniorMechTech Jecapens forward mule- Resource Name SeniorMechTech Jim Fagan Resource Where the Remove BLM's Resource Name SeniorMechTenf SeniorMechTech Jim Fagan SeniorMechTech Jim Fagan finition-	nuon shie Units 100% 400% 100% on shielding see tasks we Units 100% 400% 100%	ds, EF's Cost \$189.80 \$459.60 \$0.00 (clamshells a Fix EC Cost \$379.60 \$919.20 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 Solution of the cost Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$ctracts bridges Calorimete Act. Cost \$0.00 \$0.00 \$0.00	Rem. Cost	for effort. Thu 3/2/06 Work Ovt. W. 4 h 16 h 4 h urvey of exposed be for effort. Thu 3/2/06 Work Ovt. W. 8 h 32 h 8 h	Thu 3/2/0 ork Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	6 Act. Work 0 h 0 h 0 h d opens the N Act. Work 0 h 0 h 0 h	Rem. Work 4 h 16 h 4 h 4 h 8 S EF's. \$0.00 Rem. Work 8 h 32 h 8 h	-			
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1.5.2.2.2	This task M&S BOINA Labor BC Runlla existed a control of the con	Copen forward in Resource Name SeniorMechTechTim Fagan SeriorMechTechTim Fagan E- Copen forward in Resource Name SeniorMechTechTim Fagan Finition- Copens forward mule- Copens forward mule- Remove BLM's Resource Name SeniorMechTechTim Fagan FaniorMechTechTim Fagan Finition- Company of the Resource Name SeniorMechTechTim Fagan Finition- Company of the Resource Name Company of the Resource Name SeniorMechTechTim Fagan	nuon shie Units 100% 400% 100% on shielding see tasks we Units 100% 400% 100%	ds, EF's Cost \$189.80 \$459.60 \$0.00 (clamshells a Fix EC Cost \$379.60 \$919.20 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 Solution of the cost Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$ctracts bridges Calorimete Act. Cost \$0.00 \$0.00 \$0.00	Rem. Cost	for effort. Thu 3/2/06 Work Ovt. W. 4 h 16 h 4 h urvey of exposed be for effort. Thu 3/2/06 Work Ovt. W. 8 h 32 h 8 h	Thu 3/2/0 ork Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	6 Act. Work 0 h 0 h 0 h d opens the N Act. Work 0 h 0 h 0 h	Rem. Work 4 h 16 h 4 h 4 h 8 S EF's. \$0.00 Rem. Work 8 h 32 h 8 h	-			
1.5.2.2.2	This task M&S BOINA Labor BC Runlla ex ID 39 40 105 Notes WBS Del 39 40 105 Notes WBS Del 39 40 105 Notes WBS Del 39 40 105 39 40 105 39 40 105 39 40 105 39 40 105 39 40 105 39 40 105 39 40 105 80 WBS Del WBS Del	Copen forward in Resource Name SeniorMechTechTim Fagan SeriorMechTechTim Fagan E- Copen forward in Resource Name SeniorMechTechTim Fagan Finition- Copens forward mule- Copens forward mule- Remove BLM's Resource Name SeniorMechTechTim Fagan FaniorMechTechTim Fagan Finition- Company of the Resource Name SeniorMechTechTim Fagan Finition- Company of the Resource Name Company of the Resource Name SeniorMechTechTim Fagan	nuon shie Units 100% 400% 100% on shielding see tasks we Units 100% 400% 100%	ds, EF's Cost \$189.80 \$459.60 \$0.00 (clamshells a Fix EC Cost \$379.60 \$919.20 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 Solution of the cost Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$ctracts bridges Calorimete Act. Cost \$0.00 \$0.00 \$0.00	Rem. Cost	for effort. Thu 3/2/06 Work Ovt. W. 4 h 16 h 4 h urvey of exposed be for effort. Thu 3/2/06 Work Ovt. W. 8 h 32 h 8 h	Thu 3/2/0 ork Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	6 Act. Work 0 h 0 h 0 h d opens the N Act. Work 0 h 0 h 0 h	Rem. Work 4 h 16 h 4 h 4 h 8 S EF's. \$0.00 Rem. Work 8 h 32 h 8 h	-			
.5.2.2.2	This task M&S BOI NA Labor BC Runlla e) ID 39 40 105 Notes WBS Del This task M&S BOI NA Labor BC Runlla e) ID 39 40 105 Notes WBS Del This task M&S BOI NA Motes WBS Del This task	Copen forward in Resource Name SenionMechTechF Jim Fagan Ferove BLM's Resource Where the SenionMechTechF Jim Fagan SenionMechTechF Jim Fagan Finition- Copens forward multiple Remove BLM's Resource Name SenionMechTechF Jim Fagan Finition- Copens forward multiple Remove BLM's Resource Name SenionMechTechF Jim Fagan Finition- Copens forward multiple Ferove BLM's Resource Name SenionMechTechF Jim Fagan Finition- Copens forward multiple Finition- Copens forward multiple Ferove BLM's Resource Name SenionMechTechF Jim Fagan Finition- Copens forward multiple Ferove BLM's Resource Name Finition- Copens forward multiple Ferove BLM's Resource Name Ferove BLM's	nuon shie Units 100% 400% 100% on shielding see tasks we Units 100% 400% 100%	ds, EF's Cost \$189.80 \$459.60 \$0.00 (clamshells a Fix EC Cost \$379.60 \$919.20 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 Solution of the cost Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$ctracts bridges Calorimete Act. Cost \$0.00 \$0.00 \$0.00	Rem. Cost	for effort. Thu 3/2/06 Work Ovt. W. 4 h 16 h 4 h urvey of exposed be for effort. Thu 3/2/06 Work Ovt. W. 8 h 32 h 8 h	Thu 3/2/0 ork Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	6 Act. Work 0 h 0 h 0 h d opens the N Act. Work 0 h 0 h 0 h	Rem. Work 4 h 16 h 4 h 4 h 8 S EF's. \$0.00 Rem. Work 8 h 32 h 8 h	-			

38		Name						S	tart	Finish		M&S EQ	M&S Labor	FNAL Labor	Total Cost
2.2.4		Record and rem	ove FPD	Vetoes fro	om SNEGs			Fri 3/3		Mon 3/6/06		\$0.00	\$0.00	\$1,298.80	\$1,298.80
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work		. ,	* /
	39	SeniorMechEngF	100%	\$379.60	\$0.00	\$0.00	\$379.60	8 h	0 h	0 h	0 h	8 h	_		
	40 105	SeniorMechTechF Jim Fagan	400% 100%	\$919.20 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$919.20 \$0.00	32 h 8 h	0 h 0 h	0 h 0 h	0 h 0 h	32 h 8 h			
	Notes				,	,	,					• • •			
	WBS De														
	This tasl	k extends muon shield	d bridge arm	ns, installs w	ork platform on ar	ms, records/re	moves/stores	FPD vetoe	s from SNEG	pipes.					
	M&S BC	E-													
	NA														
	Labor B														
	Runlla e	experience where these	se tasks wer	e done durin	ig 2004 shutdown	١.									
										T 0/2/00		***			0.00000
2.2.5		Purge Beampipe						Mon 3/6		Tue 3/7/06		\$0.00	\$0.00	\$1,298.80	\$1,298.80
	ID 39	Resource Name SeniorMechEngF	Units 100%	Cost \$379.60	Baseline Cost \$0.00	Act. Cost \$0.00	Rem. Cost \$379.60	Work 8 h	Ovt. Work 0 h	Baseline Work 0 h	Act. Work 0 h	Rem. Work 8 h	_		
	40	SeniorMechTechF	400%	\$919.20	\$0.00	\$0.00	\$919.20	32 h	0 h	0 h	0 h	32 h			
	105	Jim Fagan	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h			
	Notes	P. 10													
	WBS De	tinition- k measures and recor	rds length of	guad bellow	s tee and cross	isolates D0 h	eamnine at								
	C4 adn l	D1 gate valves, insta	lls a GN2 p	urge of beam	pipe via S (D1) c	ross, installs a	remotely ope	able purge	line in N and	S EC beampipes (v	a copper lir	nes through nos	e iron holes and the	nce to C truss). Allow B	D to remove N bellows/cross/tee; bl. Measure and record temperatures in
	SNEG p	ipe flange. (Pump/bad e. Reattach N EC be	ckfill/store c	omponents). ension with r	Start N EC purge	e, remove/store	N SNEG. Re	move ECN	beampipe ex	tension spool. Ched	k internal d	nameter of N E	beampipe; visually	check with borescope.	Measure and record temperatures in
	Doampip	o. Roditaon N EO De	Sampipe ext	o. roion will p	-u.go.										
	M&S BC	nF-													
	NA														
	Labor B	05													
		DE-													
		xperience where thes	se tasks wer	e done durin	a 2004 shutdown										
		experience where thes	se tasks wer	e done durin	ng 2004 shutdown	ı.									
226						l.		Mon 3/6	5/06	Tue 3/7/06		\$0.00	\$0.00	\$1 298 80	\$1 298 80
2.2.6	Runlla e	Remove S Quad	BP items	s & SNEG	, inspect BP		Rem. Cost	Mon 3/6		Tue 3/7/06		\$0.00 Rem. Work	\$0.00	\$1,298.80	\$1,298.80
2.2.6	Runlla e	Remove S Quac Resource Name SeniorMechEngF	BP items	S & SNEG Cost \$379.60	, inspect BP Baseline Cost \$0.00	Act. Cost \$0.00	Rem. Cost \$379.60	Work 8 h	Ovt. Work 0 h	Baseline Work 0 h	Act. Work	Rem. Work 8 h	\$0.00	\$1,298.80	\$1,298.80
2.2.6	Runlla e	Remove S Quad Resource Name SeniorMechEngF SeniorMechTechF	BP items	s & SNEG	, inspect BP	Act. Cost		Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work	\$0.00	\$1,298.80	\$1,298.80
2.2.6	ID 39 40 105	Remove S Quac Resource Name SeniorMechEngF	Units 100% 400%	S & SNEG Cost \$379.60 \$919.20	, inspect BP Baseline Cost \$0.00 \$0.00	Act. Cost \$0.00 \$0.00	\$379.60 \$919.20	Work 8 h 32 h	Ovt. Work 0 h 0 h	Baseline Work 0 h 0 h	Act. Work 0 h 0 h	Rem. Work 8 h 32 h	\$0.00	\$1,298.80	\$1,298.80
2.2.6	ID 39 40 105 Notes WBS De	Remove S Quac Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan	Units 100% 400% 100%	S & SNEG Cost \$379.60 \$919.20 \$0.00	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00	\$379.60 \$919.20 \$0.00	Work 8 h 32 h 8 h	Ovt. Work 0 h 0 h 0 h	Baseline Work 0 h 0 h 0 h	Act. Work 0 h 0 h 0 h	Rem. Work 8 h 32 h 8 h	_	. ,	. ,
2.2.6	ID 39 40 105 Notes WBS De	Remove S Quace Resource Name SeniorMechTengF SeniorMechTechF Jim Fagan efinition- k allows BD to remove	Units 100% 400% 100% e S bellows/	S & SNEG Cost \$379.60 \$919.20 \$0.00 cross/tee; bla	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00	\$379.60 \$919.20 \$0.00	Work 8 h 32 h 8 h ore compor	Ovt. Work 0 h 0 h 0 h	Baseline Work 0 h 0 h 0 h	Act. Work 0 h 0 h 0 h store S SN	Rem. Work 8 h 32 h 8 h	S beampipe extens	ion spool. Check interna	\$1,298.80 al diameter of S EC beampipe; visua
2.2.6	ID 39 40 105 Notes WBS De This tasl	Remove S Quace Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan Affinition- callows BD to remove	Units 100% 400% 100% e S bellows/	S & SNEG Cost \$379.60 \$919.20 \$0.00 cross/tee; bla	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00	\$379.60 \$919.20 \$0.00	Work 8 h 32 h 8 h ore compor	Ovt. Work 0 h 0 h 0 h	Baseline Work 0 h 0 h 0 h	Act. Work 0 h 0 h 0 h store S SN	Rem. Work 8 h 32 h 8 h	S beampipe extens	ion spool. Check interna	. ,
2.2.6	ID 39 40 105 Notes WBS De	Remove S Quace Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan Affinition- callows BD to remove	Units 100% 400% 100% e S bellows/	S & SNEG Cost \$379.60 \$919.20 \$0.00 cross/tee; bla	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00	\$379.60 \$919.20 \$0.00	Work 8 h 32 h 8 h ore compor	Ovt. Work 0 h 0 h 0 h	Baseline Work 0 h 0 h 0 h	Act. Work 0 h 0 h 0 h store S SN	Rem. Work 8 h 32 h 8 h	S beampipe extens	ion spool. Check interna	. ,
2.2.6	ID 39 40 105 Notes WBS De This tasl with borv Verify pu	Remove S Quace Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan efinition- k allows BD to remove ascope. Measure and and arriges.	Units 100% 400% 100% e S bellows/	S & SNEG Cost \$379.60 \$919.20 \$0.00 cross/tee; bla	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00	\$379.60 \$919.20 \$0.00	Work 8 h 32 h 8 h ore compor	Ovt. Work 0 h 0 h 0 h	Baseline Work 0 h 0 h 0 h	Act. Work 0 h 0 h 0 h store S SN	Rem. Work 8 h 32 h 8 h	S beampipe extens	ion spool. Check interna	. ,
2.2.6	ID 39 40 105 Notes WBS De This tasl	Remove S Quace Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan efinition- k allows BD to remove ascope. Measure and and arriges.	Units 100% 400% 100% e S bellows/	S & SNEG Cost \$379.60 \$919.20 \$0.00 cross/tee; bla	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00	\$379.60 \$919.20 \$0.00	Work 8 h 32 h 8 h ore compor	Ovt. Work 0 h 0 h 0 h	Baseline Work 0 h 0 h 0 h	Act. Work 0 h 0 h 0 h store S SN	Rem. Work 8 h 32 h 8 h	S beampipe extens	ion spool. Check interna	. ,
2.2.6	ID 39 40 105 WBS De This tasl with bord Verify pu	Remove S Quace Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan efinition- k allows BD to remove secope. Measure and urges.	Units 100% 400% 100% e S bellows/	S & SNEG Cost \$379.60 \$919.20 \$0.00 cross/tee; bla	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00	\$379.60 \$919.20 \$0.00	Work 8 h 32 h 8 h ore compor	Ovt. Work 0 h 0 h 0 h	Baseline Work 0 h 0 h 0 h	Act. Work 0 h 0 h 0 h store S SN	Rem. Work 8 h 32 h 8 h	S beampipe extens	ion spool. Check interna	. ,
2.2.6	ID 39 40 105 Notes WBS De This tasl with borv Verify pu M&S BC NA Labor Br	Remove S Quace Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan efinition- k allows BD to remove secope. Measure and urges.	Units Units 100% 400% 100% e S bellows/d record terr	S & SNEG Cost \$379.60 \$919.20 \$0.00 cross/tee; blaperatures in	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 So.00 So.00 So.00 So.00 So.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 Solipe flange. (Pr Reattach S E	\$379.60 \$919.20 \$0.00	Work 8 h 32 h 8 h ore compor	Ovt. Work 0 h 0 h 0 h	Baseline Work 0 h 0 h 0 h	Act. Work 0 h 0 h 0 h store S SN	Rem. Work 8 h 32 h 8 h	S beampipe extens	ion spool. Check interna	. ,
2.2.6	ID 39 40 105 Notes WBS De This tasl with borv Verify pu M&S BC NA Labor Br	Remove S Quace Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan ofinition- c allows BD to remove ascope. Measure and urges.	Units Units 100% 400% 100% e S bellows/d record terr	S & SNEG Cost \$379.60 \$919.20 \$0.00 cross/tee; blaperatures in	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 So.00 So.00 So.00 So.00 So.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 Solipe flange. (Pr Reattach S E	\$379.60 \$919.20 \$0.00	Work 8 h 32 h 8 h ore compor	Ovt. Work 0 h 0 h 0 h	Baseline Work 0 h 0 h 0 h	Act. Work 0 h 0 h 0 h store S SN	Rem. Work 8 h 32 h 8 h	S beampipe extens	ion spool. Check interna	. ,
2.2.6	ID 39 40 105 Notes WBS De This tasl with borv Verify pu M&S BC NA Labor Br	Remove S Quace Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan ofinition- c allows BD to remove ascope. Measure and urges.	Units Units 100% 400% 100% e S bellows/d record terr	S & SNEG Cost \$379.60 \$919.20 \$0.00 cross/tee; blaperatures in	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 So.00 So.00 So.00 So.00 So.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 Solipe flange. (Pr Reattach S E	\$379.60 \$919.20 \$0.00	Work 8 h 32 h 8 h ore compor	Ovt. Work 0 h 0 h 0 h	Baseline Work 0 h 0 h 0 h	Act. Work 0 h 0 h 0 h store S SN	Rem. Work 8 h 32 h 8 h	S beampipe extens	ion spool. Check interna	. ,
	ID 39 40 105 Notes WBS De This tasl with borv Verify pu M&S BC NA Labor Br	Remove S Quace Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan ofinition- c allows BD to remove ascope. Measure and urges.	Units 100% 400% 100% 100% 100% 100% d record terr	s & SNEG Cost \$379.60 \$919.20 \$0.00 cross/tee; bli	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 So.00 So.00 So.00 So.00 So.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 Solipe flange. (Pr Reattach S E	\$379.60 \$919.20 \$0.00	Work 8 h 32 h 8 h ore compor	Ovt. Work Oh Oh Oh Start S ith purge. Inst	Baseline Work 0 h 0 h 0 h	Act. Work O h O h O h Store S SNpple beamping	Rem. Work 8 h 32 h 8 h	S beampipe extens	ion spool. Check interna	. ,
	Runlla e ID 39 40 105 Notes WBS De This tasl with born Verify pu M&S BC NA Labor Bt Runlla e	Remove S Quace Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan Affinition- A allows BD to remove ascope. Measure and urges. DE- DE- Survey C-layer N Resource Name	Units Units Units Units Units Units Units Units	s & SNEG Cost \$379.60 \$919.20 \$0.00 cross/tee; blipperatures in	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 ank off S SNEG p S EC beampipe.	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 Solipe flange. (Pr Reattach S E	\$379.60 \$919.20 \$0.00 ump/backfill/st C beampipe e	Work 8 h 32 h 8 h ore compor xtension wi	Ovt. Work Oh Oh Oh nents). Start S ith purge. Inst	Baseline Work 0 h 0 h 0 h 8 EC purge, remove/ all N & S compressi	Act. Work Oh Oh Oh Store S SNI	Rem. Work 8 h 32 h 8 h EG. Remove EG: De spacers. Loc	S beampipe extens k beampipes to EC	ion spool. Check interna s.	al diameter of S EC beampipe; visua
	ID 39 40 1005 Notes WBS De This tasl with born Verify pu M&S BC NA Labor Bt Runlla e	Remove S Quace Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan ofinition- k allows BD to remove secope. Measure and urges. DE- DE- Experience where thes Survey C-layer Measure and serior s	Units Units Units Units Units Units Units Units	s & SNEG Cost \$379.60 \$919.20 \$0.00 cross/tee; bli	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00 ank off S SNEG p S EC beampipe.	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 Solipe flange. (Pr. Reattach S E	\$379.60 \$919.20 \$0.00 ump/backfill/st C beampipe e	Work 8 h 32 h 8 h 8 h record of the second o	Ovt. Work Oh Oh Oh Start S ith purge. Inst	Baseline Work 0 h 0 h 0 h 8 EC purge, remove/ all N & S compressi	Act. Work Oh Oh Oh Oh	Rem. Work 8 h 32 h 8 h 8 h 8 h EG. Remove EG be spacers. Loc	S beampipe extens k beampipes to EC	ion spool. Check interna s.	al diameter of S EC beampipe; visua
	Runlla e ID 39 40 105 Notes WBS De This tasl with bord Verify pu M&S BC NA Labor Bt Runlla e	Remove S Quace Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan Afinition- k allows BD to remove accope. Measure and arrows DE- DE- Survey C-layer N Resource Name SurveyorF	Units Units Units Units Units Units Units Units	s & SNEG Cost \$379.60 \$919.20 \$0.00 cross/tee; blipperatures in	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 ank off S SNEG p S EC beampipe.	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 Solipe flange. (Pr Reattach S E	\$379.60 \$919.20 \$0.00 ump/backfill/st C beampipe e	Work 8 h 32 h 8 h ore compor xtension wi	Ovt. Work Oh Oh Oh nents). Start S ith purge. Inst	Baseline Work 0 h 0 h 0 h 8 EC purge, remove/ all N & S compressi	Act. Work Oh Oh Oh Store S SNI	Rem. Work 8 h 32 h 8 h EG. Remove EG: De spacers. Loc	S beampipe extens k beampipes to EC	ion spool. Check interna s.	al diameter of S EC beampipe; visua
	ID 39 40 105 Notes WBS De This tasl with bord Verify pu M&S BO NA Labor Bt Runlla e	Remove S Quace Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan Affinition- A allows BD to remove escope. Measure and arges. DE- DE- xperience where thes Survey C-layer N Resource Name SurveyorF Affinition-	Units Units Units Units Units Units Units	s & SNEG Cost \$379.60 \$919.20 \$0.00 cross/tee; blipperatures in	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 ank off S SNEG p S EC beampipe.	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 Solipe flange. (Pr Reattach S E	\$379.60 \$919.20 \$0.00 ump/backfill/st C beampipe e	Work 8 h 32 h 8 h ore compor xtension wi	Ovt. Work Oh Oh Oh nents). Start S ith purge. Inst	Baseline Work 0 h 0 h 0 h 8 EC purge, remove/ all N & S compressi	Act. Work Oh Oh Oh Store S SNI	Rem. Work 8 h 32 h 8 h EG. Remove EG: De spacers. Loc	S beampipe extens k beampipes to EC	ion spool. Check interna s.	al diameter of S EC beampipe; visua
	ID 39 40 105 Notes WBS De This tasl with bord Verify pu M&S BO NA Labor Bt Runlla e	Remove S Quace Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan Afinition- k allows BD to remove accope. Measure and arrows DE- DE- Survey C-layer N Resource Name SurveyorF	Units Units Units Units Units Units Units	s & SNEG Cost \$379.60 \$919.20 \$0.00 cross/tee; blipperatures in	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 ank off S SNEG p S EC beampipe.	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 Solipe flange. (Pr Reattach S E	\$379.60 \$919.20 \$0.00 ump/backfill/st C beampipe e	Work 8 h 32 h 8 h ore compor xtension wi	Ovt. Work Oh Oh Oh nents). Start S ith purge. Inst	Baseline Work 0 h 0 h 0 h 8 EC purge, remove/ all N & S compressi	Act. Work Oh Oh Oh Store S SNI	Rem. Work 8 h 32 h 8 h EG. Remove EG: De spacers. Loc	S beampipe extens k beampipes to EC	ion spool. Check interna s.	al diameter of S EC beampipe; visua
	Runlla e ID 39 40 105 Notes WBS De This tasl with borr Verify pu M&S BC NA Labor Bt Runlla e	Remove S Quace Resource Name SeniorMechEngF SeniorMechTengF SeniorMechTengF SeniorMechTengF Jim Fagan Affinition- K allows BD to remove secope. Measure and urges. DE- DE- Experience where thes Survey C-layer N Resource Name SurveyorF Affinition- K surveys the C-layer	Units Units Units Units Units Units Units	s & SNEG Cost \$379.60 \$919.20 \$0.00 cross/tee; blipperatures in	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 ank off S SNEG p S EC beampipe.	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 Solipe flange. (Pr Reattach S E	\$379.60 \$919.20 \$0.00 ump/backfill/st C beampipe e	Work 8 h 32 h 8 h ore compor xtension wi	Ovt. Work Oh Oh Oh nents). Start S ith purge. Inst	Baseline Work 0 h 0 h 0 h 8 EC purge, remove/ all N & S compressi	Act. Work Oh Oh Oh Store S SNI	Rem. Work 8 h 32 h 8 h EG. Remove EG: De spacers. Loc	S beampipe extens k beampipes to EC	ion spool. Check interna s.	al diameter of S EC beampipe; visua
2.2.6	ID 39 40 105 WBS De This tasl with bord NA Labor Br Runlla e	Remove S Quace Resource Name SeniorMechEngF SeniorMechTengF SeniorMechTengF SeniorMechTengF Jim Fagan Affinition- K allows BD to remove secope. Measure and urges. DE- DE- Experience where thes Survey C-layer N Resource Name SurveyorF Affinition- K surveys the C-layer	Units Units Units Units Units Units Units	s & SNEG Cost \$379.60 \$919.20 \$0.00 cross/tee; blipperatures in	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 ank off S SNEG p S EC beampipe.	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 Solipe flange. (Pr Reattach S E	\$379.60 \$919.20 \$0.00 ump/backfill/st C beampipe e	Work 8 h 32 h 8 h ore compor xtension wi	Ovt. Work Oh Oh Oh nents). Start S ith purge. Inst	Baseline Work 0 h 0 h 0 h 8 EC purge, remove/ all N & S compressi	Act. Work Oh Oh Oh Store S SNI	Rem. Work 8 h 32 h 8 h EG. Remove EG: De spacers. Loc	S beampipe extens k beampipes to EC	ion spool. Check interna s.	al diameter of S EC beampipe; visua
	ID 39 40 105 Notes WBS De This tasl with borr Verify pu M&S BC NA Labor Be Runlla e	Remove S Quace Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan efinition- kallows BD to remove escope. Measure and larges. DE- DE- Survey C-layer N Resource Name SurveyorF efinition- k surveys the C-layer DE-	Units Units Units Units Units Units Units Units	s & SNEG Cost \$379.60 \$919.20 \$0.00 Ccross/tee; blipperatures in the done during SSES Cost B \$919.20	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 ank off S SNEG p S EC beampipe.	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 Solution flange. (Pt Reattach S E	\$379.60 \$919.20 \$0.00 ump/backfill/st C beampipe e	Work 8 h 32 h 8 h ore compor xtension wi	Ovt. Work Oh Oh Oh nents). Start S ith purge. Inst	Baseline Work 0 h 0 h 0 h 8 EC purge, remove/ all N & S compressi	Act. Work Oh Oh Oh Store S SNI	Rem. Work 8 h 32 h 8 h EG. Remove EG: De spacers. Loc	S beampipe extens k beampipes to EC	ion spool. Check interna s.	al diameter of S EC beampipe; visua
	ID 39 40 105 Notes WBS De This tasl with borr Verify pu M&S BC NA Labor Be Runlla e	Remove S Quace Resource Name SeniorMechEngF SeniorMechTenfF Jim Fagan efinition- callows BD to remove secope. Measure and arges. DE- DE- xperience where thes Survey C-layer N Resource Name SurveyorF efinition- callows the C-layer of the second of the	Units Units Units Units Units Units Units Units	s & SNEG Cost \$379.60 \$919.20 \$0.00 Ccross/tee; blipperatures in the done during SSES Cost B \$919.20	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 ank off S SNEG p S EC beampipe.	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 Solution flange. (Pt Reattach S E	\$379.60 \$919.20 \$0.00 ump/backfill/st C beampipe e	Work 8 h 32 h 8 h ore compor xtension wi	Ovt. Work Oh Oh Oh nents). Start S ith purge. Inst	Baseline Work 0 h 0 h 0 h 8 EC purge, remove/ all N & S compressi	Act. Work Oh Oh Oh Store S SNI	Rem. Work 8 h 32 h 8 h EG. Remove EG: De spacers. Loc	S beampipe extens k beampipes to EC	ion spool. Check interna s.	al diameter of S EC beampipe; visua
2.2.7	ID 39 40 105 Notes WBS De This tasl with borr Verify pu M&S BC NA Labor Be Runlla e	Remove S Quace Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan Intition- Kallows BD to remove escope. Measure and earliers. DE- DE- Experience where thes Survey C-layer N Resource Name SurveyorF Intition- Kallows BD to remove escope. Measure and earliers. Survey C-layer N Resource Name SurveyorF Intition- Kallows BD to remove escope. Measure Name SurveyorF DE- DE- DE- DE- DE- DE- DE- DE- DE- DE	Units See tasks were Wuon Trus Units Units Units Units Units Units Units Units	s & SNEG Cost \$379.60 \$919.20 \$0.00 Ccross/tee; blipperatures in the done during SSES Cost B \$919.20	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 ank off S SNEG p S EC beampipe.	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 Solution flange. (Pt Reattach S E	\$379.60 \$919.20 \$0.00 ump/backfill/st C beampipe e	Work 8 h 32 h 8 h ore comportension with the second	Ovt. Work Oh Oh Oh Start S ith purge. Inst	Baseline Work Oh Oh Oh SEC purge, remove/ all N & S compressi	Act. Work O h O h O h Store S SNI	Rem. Work 8 h 32 h 8 h 8 h 8 h 8 h 8 h 8 h 8 h 8 h 8 h 8	S beampipe extens it beampipes to EC	ion spool. Check internals.	al diameter of S EC beampipe; visua
	ID 39 40 105 Notes WBS De This tasl with borr Verify pu M&S BC NA Labor Be Runlla e	Remove S Quace Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan efinition- kallows BD to remove escope. Measure and larges. DE- DE- Survey C-layer N Resource Name SurveyorF efinition- k surveys the C-layer DE-	Units See tasks were Wuon Trus Units Units Units Units Units Units Units Units	s & SNEG Cost \$379.60 \$919.20 \$0.00 Ccross/tee; blipperatures in the done during SSES Cost B \$919.20	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 ank off S SNEG p S EC beampipe.	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 Solution flange. (Pt Reattach S E	\$379.60 \$919.20 \$0.00 ump/backfill/st C beampipe e	Work 8 h 32 h 8 h ore compor xtension wi	Ovt. Work Oh Oh Oh Start S ith purge. Inst	Baseline Work 0 h 0 h 0 h 8 EC purge, remove/ all N & S compressi	Act. Work Oh Oh Oh Store S SNI	Rem. Work 8 h 32 h 8 h EG. Remove EG: De spacers. Loc	S beampipe extens k beampipes to EC	ion spool. Check interna s.	al diameter of S EC beampipe; visua
2.2.7	ID 39 40 105 Notes WBS De This tasl with borr Verify pu M&S BC NA Labor Be Runlla e	Remove S Quace Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan Intition- Kallows BD to remove escope. Measure and earliers. DE- DE- Experience where thes Survey C-layer N Resource Name SurveyorF Intition- Kallows BD to remove escope. Measure and earliers. Survey C-layer N Resource Name SurveyorF Intition- Kallows BD to remove escope. Measure Name SurveyorF DE- DE- DE- DE- DE- DE- DE- DE- DE- DE	Units See tasks were Wuon Trus Units Units Units Units Units Units Units Units	s & SNEG Cost \$379.60 \$919.20 \$0.00 Ccross/tee; blipperatures in the done during SSES Cost B \$919.20	, inspect BP Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 ank off S SNEG p S EC beampipe.	Act. Cost \$0.00 \$0.00 \$0.00 Solve flange. (Pt Reattach S E	\$379.60 \$919.20 \$0.00 ump/backfill/st C beampipe e	Work 8 h 32 h 8 h ore compor xtension wi	Ovt. Work Oh Oh Oh Start S ith purge. Inst	Baseline Work Oh Oh Oh SEC purge, remove/ all N & S compressi	Act. Work O h O h O h Store S SNI	\$0.00 Rem. Work \$ h 32 h \$ h \$ sh \$ sh \$ sh \$ sh \$ sh \$ sh \$ s	\$0.00	ion spool. Check internals.	al diameter of S EC beampipe; visua

		Name						Sta	art	Finish	ı N	1&S EQ	M&S Labor	FNAL Labor	Total Cost	
en EF's	,,	,														
	ID 49	Resource Name GapN	Units 200%	Cost \$0.00	Baseline Cost \$0.00	Act. Cost \$0.00	Rem. Cost \$0.00	Work 16 h	Ovt. Work	Baseline Work 0 h	Act. Work 0 h	Rem. Work 16 h	_			
	50	GapS	200%	\$0.00	\$0.00	\$0.00	\$0.00	16 h	0 h		0 h					
	51	Cathedral	400%	\$0.00			\$0.00		0 h	0 h	0 h					
	105	Jim Fagan	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h				
	Notes	efinition-														
	This tas	enntion- sk removes working p	latforms and	d access har	dware from muon	bridges and si	dewalks, retra	cts muon shi	elds, opens	EF's, opens CF's, o	pens EC's, n	nakes rad surve	of exposed beam	pipe and calorimeter sur	faces, and installs gap	access har
	M&S BO	OE-														
	Labor B	BOF-														
		experience where this	s task was c	done (especia	ally during the 200	4 shutdown) fo	orms the basis	of estimate.								
2.2.9		Install Gap Acc	ess Hardi	ware Mak	e Rad Survey			Wed 3/8/0	ne	Thu 3/9/06	<u> </u>	\$0.00	\$0.00	\$1,758.40	\$1,758.40	
2.2.5	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work	φ0.00	φ1,730.40	φ1,730.40	
	39	SeniorMechEngF	100%	\$379.60	\$0.00	\$0.00	\$379.60	8 h	0 h	0 h	0 h	8 h	_			
	40	SeniorMechTechF	600% 200%	\$1,378.80 \$0.00	\$0.00 \$0.00	\$0.00	\$1,378.80		0 h 0 h	0 h 0 h	0 h 0 h	48 h 16 h				
	49 50	GapN GapS	200% 200%	\$0.00 \$0.00			\$0.00 \$0.00		0 h 0 h		0 h 0 h					
	51	Cathedral	600%	\$0.00	\$0.00	\$0.00	\$0.00	48 h	0 h	0 h	0 h	48 h				
	105	Jim Fagan	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h				
2.2.10		Warm Silicon						Wed 3/8/		Thu 3/9/06		\$0.00	\$0.00	\$229.80	\$229.80	
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost		vt. Work		Act. Work	Rem. Work				
	11 40	PhysicistF SeniorMechTechF	50% 100%	\$0.00 \$229.80	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$229.80	4 h 8 h	0 h 0 h	0 h 0 h	0 h 0 h	4 h 8 h				
	49	GapN	50%	\$0.00	\$0.00	\$0.00	\$0.00	4 h	0 h	0 h	0 h	4 h				
	50	GapS Cothodrol	50%	\$0.00	\$0.00	\$0.00	\$0.00	4 h	0 h	0 h	0 h	4 h				
	51 58	Cathedral Bill Cooper	100% 50%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	8 h 4 h	0 h 0 h	0 h 0 h	0 h 0 h	8 h 4 h				
		efinition- sk warms the silicon	above CH d	lewpoint; 12-2	24 hrs is sufficient											
	WBS Do This tas M&S BO NA Labor B	sk warms the silicon					ne basis of est	imate.								
	WBS Do This tas M&S BO NA Labor B	sk warms the silicon and one of the silicon a	ese operatic	ons were don	e during 2004 shu	ıtdown forms th	ne basis of est	imate. Thu 3/9/	06	Thu 3/9/06	·	\$0.00	\$0.00	\$0.00	\$0.00	
	WBS De This tas M&S BC NA Labor B Runlla e	Silicon Warm,	ese operatic	ons were don	e during 2004 shu	ıtdown forms th	ne basis of est		06	Thu 3/9/06	.	\$0.00	\$0.00	\$0.00	\$0.00	
	WBS Do This tas M&S BC NA Labor B Runlla e	ok warms the silicon of the silicon	ese operatic	Open & F	e during 2004 shu	ess			06	Thu 3/9/06	.	\$0.00	\$0.00	\$0.00	\$0.00	
2.2.11	WBS Do This tas M&S BC NA Labor B Runlla e	sk warms the silicon open open of the silicon warm, sefinition-	ese operatic	Open & F	e during 2004 shu	ess			06	Thu 3/9/06	;	\$0.00	\$0.00	\$0.00	\$0.00	
2.2.11	WBS Do This tas M&S BC NA Labor B Runlla e	Silicon Warm, efinition- ne-Be beampipe disc Disconnect Ini	Detector	Open & Foom EC beam	e during 2004 shu Ready for Acc pipes. First Be as	ess ess say wipes out t	for analysis.	Thu 3/9/	06	Mon 3/13/06	;	\$0.00	\$0.00	\$0.00 \$2,707.40	\$0.00 \$2,707.40	
2.2.11	WBS Do This tas M&S BC NA Labor B Runlla e	OE- SILICON WARM, effinition- ne-Be beampipe disc Disconnect Int Resource Name	Detector connected from	ons were don Open & F om EC beam onpipe Cost	e during 2004 shu Ready for Acc pipes. First Be as Baseline Cost	ess say wipes out t	for analysis. Rem. Cost	Thu 3/9/0 Thu 3/9/0 Work Ov	06 n. Work	Mon 3/13/06 Baseline Work A	ct. Work	\$0.00 Rem. Work				
2.2.11	WBS Do This tas M&S BC NA Labor B Runlla e	Silicon Warm, efinition- ne-Be beampipe disc Disconnect Ini	Detector	Open & Foom EC beam	e during 2004 shu Ready for Acc pipes. First Be as	ess ess say wipes out t	for analysis.	Thu 3/9/	06	Mon 3/13/06	;	\$0.00				
2.2.11	WBS Do This tass M&S BC NA Labor B Runlla & WBS Do Milestor	Silicon Warm, efinition- ne-Be beampipe disc Disconnect Int Resource Name SeniorMechEngF Russ Rucinski	Detector connected from the Beam Units 100%	Open & F om EC beam pipe Cost \$949.00	e during 2004 shu Ready for Acc pipes. First Be as Baseline Cost \$0.00	ess say wipes out t	for analysis. Rem. Cost \$949.00	Thu 3/9/v Thu 3/9/v Work Ov 20 h	06 d. Work	Mon 3/13/06 Baseline Work A 0 h	ct. Work	\$0.00 Rem. Work				
2.2.11	WBS Do This tas M&S BC NA Labor B Runlla c Notes WBS Do Milestor ID 39 Notes WBS Do	Silicon Warm, efinition- ne-Be beampipe disc Disconnect Int Resource Name SeniorMechEngF Russ Rucinski efinition-	Detector connected from the Beam Units 100% 100%	Open & F Open & F om EC beam Dipipe Cost \$949.00 \$0.00	e during 2004 shu Ready for Acc pipes. First Be as Baseline Cost \$0.00 \$0.00	ess say wipes out the say wipe	for analysis. Rem. Cost \$949.00 \$0.00	Thu 3/9/v Work Ov 20 h 20 h	06 d. Work 0 h 0 h	Mon 3/13/06 Baseline Work A 0 h 0 h	ct. Work O h O h	\$0.00 Rem. Work				
2.2.11	WBS Do This tas M&S BC NA Labor B Runlla c Notes WBS Do Milestor ID 39 Notes WBS Do	Silicon Warm, efinition- ne-Be beampipe disc Disconnect Int Resource Name SeniorMechEngF Russ Rucinski	Detector connected from the Beam Units 100% 100%	Open & F Open & F om EC beam Dipipe Cost \$949.00 \$0.00	e during 2004 shu Ready for Acc pipes. First Be as Baseline Cost \$0.00 \$0.00	ess say wipes out the say wipe	for analysis. Rem. Cost \$949.00 \$0.00	Thu 3/9/v Work Ov 20 h 20 h	06 d. Work 0 h 0 h	Mon 3/13/06 Baseline Work A 0 h 0 h	ct. Work O h O h	\$0.00 Rem. Work				
2.2.11	WBS Do This tas M&S BC NA Labor B Runlla c Notes WBS Do Milestor ID 39 Notes WBS Do	Silicon Warm, efinition- ne-Be beampipe disc Disconnect Int Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task closes El	Detector connected from the Beam Units 100% 100%	Open & F Open & F Ome EC beam Open Open Open Open Open Open Open Open	e during 2004 shu Ready for Acc pipes. First Be as Baseline Cost \$0.00 \$0.00 6 pipes, drains Si o	ess say wipes out the say wipe	for analysis. Rem. Cost \$949.00 \$0.00	Thu 3/9/0 Thu 3/9/0 Work Ov 20 h 20 h	06 a. Work Oh Oh eampipes, p	Mon 3/13/06 Baseline Work A 0 h 0 h voriges Si coolant line	ot. Work Oh Oh	\$0.00 Rem. Work 20 h 20 h	\$0.00	\$2,707.40	\$2,707.40	
2.2.11	WBS Do This tas M&S BO NA Labor B Runlla 6 Notes WBS Do Milestor ID 39 59 Notes WBS Do This sur	Silicon Warm, efinition- ne-Be beampipe disc Disconnect Int Resource Name SeriorMechEngF Russ Rucinski Prepare for ECA	Detector connected from the Beam Units 100% 100%	ons were don Open & F om EC beam Opipe Cost \$949.00 \$0.00 moves SNEG	e during 2004 shu Ready for Acc pipes. First Be as Baseline Cost \$0.00 \$0.00 6 pipes, drains Si o	ess say wipes out the solution of the solution	for analysis. Rem. Cost \$949.00 \$0.00 See EC's/EF's, cu	Thu 3/9// Work Ov 20 h 20 h ts off inner b	06 at. Work 0 h 0 h eampipes, p	Mon 3/13/06 Baseline Work A 0 h 0 h ourges Si coolant line	ct. Work Oh Oh	\$0.00 Rem. Work 20 h 20 h				
	WBS Do This tas M&S BO NA Labor B Runlla 6 Notes WBS Do Milestor ID 39 Notes WBS Do This sur	Silicon Warm, efinition- ne-Be beampipe disc Disconnect Int Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task closes El	Detector connected from the Beam Units 100% 100%	Open & F Open & F Ome EC beam Open Open Open Open Open Open Open Open	e during 2004 shu Ready for Acc pipes. First Be as Baseline Cost \$0.00 \$0.00 6 pipes, drains Si o	ess say wipes out the say wipe	for analysis. Rem. Cost \$949.00 \$0.00	Thu 3/9// Work Ov 20 h 20 h ts off inner b	06 a. Work Oh Oh eampipes, p	Mon 3/13/06 Baseline Work A 0 h 0 h voriges Si coolant line	ot. Work Oh Oh	\$0.00 Rem. Work 20 h 20 h	\$0.00	\$2,707.40	\$2,707.40	
2.2.11	WBS Do This tas M&S BC NA Labor B Runlla 6 Notes WBS Do Milestor WBS Do This sur	Silicon Warm, Silicon Warm, efinition- ne-Be beampipe disc Disconnect Int Resource Name SeniorMechEngF Russ Rucinski Prepare for EC, Resource Name SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechTechF	Detector connected from the Beam Units 100% 100% F's/EC's, rer Units 100% 100%	ons were don Open & F om EC beam Dippe Cost \$949.00 \$0.00 moves SNEG Cost S189.80 \$459.60	e during 2004 shu Ready for Acc pipes. First Be as Baseline Cost \$0.00 \$0.00 \$ pipes, drains Si of the Cost So.00 \$0.00	ess Say wipes out 1 Act. Cost	for analysis. Rem. Cost \$949.00 \$0.00 s EC's/EF's, cu Rem. Cost \$189.80 \$459.60	Thu 3/9// Work Ov 20 h 20 h ts off inner b Thu 3/9// Work 4 4 h 16 h	06 4. Work 0 h 0 h 0 h Control 0 h 0 h Ovt. Work 0 h 0 h	Mon 3/13/06 Baseline Work A 0 h 0 h ourges Si coolant line Thu 3/9/06 Baseline Work 0 h 0 h	oct. Work Oh Oh Oh Act. Work Oh Oh	\$0.00 Rem. Work 20 h 20 h \$0.00 Rem. Work 4 h 16 h	\$0.00	\$2,707.40	\$2,707.40	
2.2.11	WBS Do This tas M&S BC NA Labor B Runlla 6 Notes WBS Do Milestor ID 39 59 Notes WBS Do This sur	Silicon Warm, efinition- ne-Be beampipe disc Disconnect Int Resource Name SeniorMechEngF Russ Rucinski Prepare for EC, Resource Name SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechTechF GapN	Detector connected from the Beam Units 100% 100% F's/EC's, rer Units 100% White 100% White 100% A00% 400% 200%	ons were don Open & F om EC beam pipe Cost \$949.00 \$0.00 moves SNEG nnect, Mak Cost \$189.80 \$459.60 \$0.00	e during 2004 shu Ready for Acc pipes. First Be as Baseline Cost \$0.00 \$0.00 Spipes, drains Si of Read Survey Baseline Cost \$0.00 \$0.00 \$0.00	ess say wipes out to so o	for analysis. Rem. Cost \$949.00 \$0.00 S. EC's/EF's, cu Rem. Cost \$189.80 \$459.60 \$0.00	Thu 3/9/ Work Ov 20 h 20 h 20 h 20 h 4 h 16 h 8 h	06 t. Work 0h 0h 0h eampipes, p 06 Ovt. Work 0h 0h 0h	Mon 3/13/06 Baseline Work A 0 h 0 h Durges Si coolant line Thu 3/9/06 Baseline Work 0 h 0 h 0 h	ot. Work Oh Oh Oh Act. Work Oh Oh	\$0.00 Rem. Work 20 h 20 h 20 h \$0.00 Rem. Work 4 h 16 h 8 h	\$0.00	\$2,707.40	\$2,707.40	
2.2.11	WBS Do This tas M&S BC NA Labor B Runlla 6 Notes WBS Do Milestor WBS Do This sur	Silicon Warm, Silicon Warm, efinition- ne-Be beampipe disc Disconnect Int Resource Name SeniorMechEngF Russ Rucinski Prepare for EC, Resource Name SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechTechF	Detector connected from the Beam Units 100% 100% F's/EC's, rer Units 100% 100%	ons were don Open & F om EC beam Dippe Cost \$949.00 \$0.00 moves SNEG Cost S189.80 \$459.60	e during 2004 shu Ready for Acc pipes. First Be as Baseline Cost \$0.00 \$0.00 \$ pipes, drains Si of the Cost So.00 \$0.00	ess Say wipes out 1 Act. Cost	for analysis. Rem. Cost \$949.00 \$0.00 s EC's/EF's, cu Rem. Cost \$189.80 \$459.60	Thu 3/9// Work Ov 20 h 20 h ts off inner b Thu 3/9// Work 4 4 h 16 h	06 4. Work 0 h 0 h 0 h Control 0 h 0 h Ovt. Work 0 h 0 h	Mon 3/13/06 Baseline Work A 0 h 0 h ourges Si coolant line Thu 3/9/06 Baseline Work 0 h 0 h	oct. Work Oh Oh Oh Act. Work Oh Oh	\$0.00 Rem. Work 20 h 20 h \$0.00 Rem. Work 4 h 16 h	\$0.00	\$2,707.40	\$2,707.40	
2.2.11	WBS Do This tas M&S BC NA Labor B Runlla & WBS Do Milestor Milestor WBS Do Milestor WBS Do This sur	Silicon Warm, efinition- ne-Be beampipe disc Disconnect Int Resource Name SeniorMechEngF Russ Rucinski Prepare for EC, Resource Name SeniorMechEngF SeniorMechTechF GapN GapS Cathedral Dave Butler	Detector Detector connected from the Beam Units 100% 100% 100% 100% 400% 400% 400% 50%	Open & F Ope	e during 2004 shu Ready for Acc pipes. First Be as Baseline Cost \$0.00 \$0.00 Solution \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	### Act. Cost	Rem. Cost \$349.00 \$0.00 S.C.00 SEC'S/EF'S, CU Rem. Cost \$189.80 \$459.60 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Thu 3/9/ Work Ov 20 h 20 h 3/9/ Use ts off inner b Thu 3/9/ Work 4 4 h 16 h 8 h 8 h 16 h 2 h	O6 t. Work Oh Oh Oh Oh Oh Oh Oh Oh Oh O	Mon 3/13/06 Baseline Work A 0 h 0 h ourges Si coolant line Thu 3/9/06 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	act. Work Oh	\$0.00 Rem. Work 20 h 20 h \$0.00 Rem. Work 4 h 16 h 8 h 16 h 2 h	\$0.00	\$2,707.40	\$2,707.40	
2.2.11	WBS Do This tas M&S BC NA Labor B Runlla e Notes WBS Do Milestor ID 39 59 Notes WBS Do This sur	Silicon Warm, efinition- ne-Be beampipe disc Disconnect Int Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task closes El Prepare for EC, Resource Name SeniorMechEngF SeniorMechEngF SeniorMechTechF GapS Cathedral	Detector connected from the Beam Units 100% 100% 100% 100% 100% 100% 100% 100	Open & F Ope	e during 2004 shu Ready for Acc pipes. First Be as Baseline Cost \$0.00 \$0.00 S pipes, drains Si of Read Survey Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	### Act. Cost \$0.00	Fem. Cost \$949.00 \$0.00 \$0.00 \$EC's/EF's, CU Rem. Cost \$189.80 \$459.60 \$0.00 \$0.00 \$0.00	Thu 3/9// Work Ov 20 h 20 h Thu 3/9// Work In 16 h 8 h 8 h 16 h	06 t. Work 0 h 0 h eampipes, p 06 Ovt. Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Mon 3/13/06 Baseline Work A 0 h 0 h ourges Si coolant line Thu 3/9/06 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	oct. Work O h O h Act. Work O h O h O h O h O h O h	\$0.00 Rem. Work 20 h 20 h \$0.00 Rem. Work 4 h 16 h 8 h 8 h	\$0.00	\$2,707.40	\$2,707.40	

WBS DefinitionThis task (optionally) stops dry air purge, removes tedlar membranes, removes foam, G10 for TLD',s removes bellows protectors at EC/Be joints. Past experience indicates Be wiping isn't necessary. Task also prepares GN2 purge lines for Be pipe, and EC pipes. Make Rad survey of newly exposed beampipe regions.

M&S BOE-

WBS M&S EQ M&S Labor Name Start Finish FNAL Labor **Total Cost** /Be disconnect, Make Rad Survey" continued NA Labor BOE-Runlla experience where these operations were done during 2004 shutdown forms the basis of estimate. 1.5.2.3.2 \$554.50 \$554.50 Disconnect Be pipe, establish EC and Be pipe purges Fri 3/10/06 Fri 3/10/06 \$0.00 \$0.00 Resource Name Units Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work 39 SeniorMechEngF 50% \$94.90 \$0.00 \$0.00 \$94.90 2 h 2 h 40 SeniorMechTechF 400% \$459.60 \$0.00 \$0.00 \$459.60 16 h 0 h 0 h 0 h 16 h 49 50 GapN 200% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 0 h 8 h GapS 200% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h Ωh 0 h 8 h 51 Cathedral 400% \$0.00 \$0.00 \$0.00 \$0.00 0 h 16 h 16 h 0 h 0 h 59 Russ Rucinski 50% \$0.00 \$0.00 \$0.00 \$0.00 2 h 0 h 0 h 0 h 2 h Notes This task unlocks N beampipe spacer, disconnects N EC/Be joint, retracts N EC beampipe ~ 30 inches, establishes purge of N EC beampipe; then repeats for S EC beampipe and EC/Be joint. Establishes purge of Be pipe M&S BOE-Labor BOE-Runlla experience, careful planning and testing of all tooling, forms the basis of estimate. 1.5.2.3.3 \$0.00 \$0.00 \$554.50 \$554.50 Cut EC pipe ends, Record Temperatures in EC pipes Fri 3/10/06 Fri 3/10/06 Resource Name Units Cost Raseline Cost Act. Cost Rem. Cost Work Ovt. Work Raseline Work Act Work Rem. Work \$0.00 \$0.00 \$0.00 39 SeniorMechEngl 50% \$94.90 \$0.00 \$94.90 2 h 0 h 2 h 40 49 400% \$459.60 \$459.60 \$0.00 16 h 8 h SeniorMechTechF \$0.00 16 h 0 h 0 h 0 h 0 h \$0.00 8 h 200% \$0.00 0 h GapN 0 h 50 GapS 200% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 0 h 8 h 51 Cathedral 400% \$0.00 \$0.00 \$0.00 \$0.00 16 h 0 h 0 h 0 h 16 h 105 Jim Fagan 100% \$0.00 \$0.00 \$0.00 \$0.00 4 h 0 h 0 h 0 h 4 h WBS Definition-This task cuts off EC/Be flanges on EC beampipes, measures temperatures in EC pipes, reestablishes purges, deenergize pipe spacers. M&S BOE-Labor BOE-Runlla experience, careful planning and testing of all tooling, forms the basis of estimate. 1.5.2.3.4 Mon 3/13/06 Mon 3/13/06 \$0.00 \$0.00 \$0.00 \$0.00 Power Outage in Collision Hall WBS Definition-This task provides 1-day window for power outage in collision hall. M&S BOE-NA Labor BOE-NA 1.5.2.3.5 \$0.00 Be Beampipe Disconnected Mon 3/13/06 Mon 3/13/06 \$0.00 \$0.00 \$0.00 Milestone-Be beampipe disconnected from EC beampipes. First Be assay wipes out for analysis. 1.5.2.4 Remove H-disks Tue 3/14/06 Tue 3/21/06 \$0.00 \$0.00 \$5,925.40 \$5,925.40 ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Rem. Work SeniorMechEngF 100% \$2,087.80 \$0.00 \$0.00 \$2,087.80 44 h 59 Russ Rucinski 100% \$0.00 \$0.00 \$0.00 \$0.00 44 h 0 h 0 h 0 h 44 h WBS Definition-This summary task uncables and removes H-disks. The inner H-disks will be reinstalled after L0 is installed.

s		Name							Start	Finis	h	M&S EQ	M&S Labor	FNAL Labor	Total Cost	
.2.4.1		Uncable Oute	r H disks					Tue 3/	14/06	Tue 3/14/0	6	\$0.00	\$0.00	\$720.00	\$720.00	
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work		Act. Work	Rem. Work				
	11 38	PhysicistF SeniorElecTechF	100% 300%	\$0.00 \$720.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$720.00	8 h 24 h	0 h 0 h	0 h 0 h	0 h 0 h	8 h 24 h				
	49	GapN	200%	\$0.00	\$0.00	\$0.00	\$0.00	16 h	0 h	0 h	0 h	16 h				
	50 51	GapS Cathedral	100% 400%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	8 h 32 h	0 h 0 h	0 h 0 h	0 h 0 h	8 h 32 h				
	51 55	Linda Bagby	100%	\$0.00	\$0.00	\$0.00	\$0.00	32 II 8 h	0 h	0 h	0 h	32 II 8 h				
	56	Dave Butler	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h				
	69 99	John Fogelsong Chris Tolian	100% 100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	8 h 8 h	0 h 0 h	0 h 0 h	0 h 0 h	8 h 8 h				
	Notes															
	WBS D	efinition- sk disconnects and	removes the	low mass ca	bles (48 per side) from the N 8	S outer H disk	s								
	NA															
	Labor B Estimat		ın2a installat	ion experien	ce, reduced by co	onsiderations	of the expected	simpler ta	ask of removal	as compared with in	stallation.					
2.4.2		Stop Coolant t						Tue 3/		Tue 3/14/0		\$0.00	\$0.00	\$189.80	\$189.80	
	ID 11	Resource Name PhysicistF	Units	Cost \$0.00	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work		Act. Work	Rem. Work				
	11 39	PhysicistF SeniorMechEngF	50% 100%	\$0.00 \$189.80	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$189.80	2 h 4 h	0 h 0 h	0 h 0 h	0 h 0 h	2 h 4 h				
	49	GapN	100%	\$0.00	\$0.00	\$0.00	\$0.00	4 h	0 h	0 h	0 h	4 h				
	50 51	GapS Cathedral	100% 200%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	4 h 8 h	0 h 0 h	0 h 0 h	0 h 0 h	4 h 8 h				
	58	Bill Cooper	50%	\$0.00	\$0.00	\$0.00	\$0.00	2 h	0 h	0 h	0 h	2 h				
	94	Dan Olis	100%	\$0.00	\$0.00	\$0.00	\$0.00	4 h	0 h	0 h	0 h	4 h				
		efinition- sk istops coolant flo	w to H-disks,	drains and p	ourges coolant lin	es.										
	M&S BONA	BOE-	0 :													
0.4.0	M&S BONA	3OE- tes are based on Ru					of the expected	•		as compared with in		#0.00	* ***********************************	\$440.CO	\$440.00	
2.4.3	M&S BO NA Labor B Estimat	BOE- tes are based on Ru Disconnect Co	oolant lines	s, Remove	Rohacell Be	Support	· ·	Tue 3/	14/06	Tue 3/14/0	6	\$0.00	\$0.00	\$419.60	\$419.60	
2.4.3	M&S BONA	BOE- tes are based on Ru Disconnect Co Resource Name PhysicistF		Cost		Support Act. Cost \$0.00	of the expected Rem. Cost \$0.00	•				Rem. Work	\$0.00	\$419.60	\$419.60	
2.4.3	M&S BONA Labor B Estimat	BOE- tes are based on Ru Disconnect Co Resource Name PhysicistF SeniorMechEngF	Units 50% 100%	Cost \$0.00 \$189.80	Rohacell Be Baseline Cost \$0.00 \$0.00	Support Act. Cost \$0.00 \$0.00	Rem. Cost \$0.00 \$189.80	Tue 3/ Work	0 h	Tue 3/14/0 Baseline Work 0 h 0 h	6 Act. Work 0 h 0 h	Rem. Work 2 h 4 h	\$0.00	\$419.60	\$419.60	
2.4.3	M&S BONA Labor E Estimate ID 11 39 40	BOE- tes are based on Ru Disconnect Co Resource Name PhysicistF SeniorMechEngF SeniorMechTechF	Oolant lines Units 50% 100% 200%	S, Remove	Baseline Cost \$0.00 \$0.00 \$0.00	Support Act. Cost \$0.00 \$0.00 \$0.00	Rem. Cost \$0.00 \$189.80 \$229.80	Tue 3/ Work 2 h 4 h 8 h	14/06 Ovt. Work 0 h 0 h	Tue 3/14/0 Baseline Work 0 h 0 h 0 h	6 Act. Work 0 h 0 h 0 h	Rem. Work 2 h 4 h 8 h	\$0.00	\$419.60	\$419.60	
2.4.3	M&S BO NA Labor E Estimat ID 11 39 40 49 50	BOE- tes are based on Ru Disconnect Co Resource Name Physicistif SeniorMechEngF SeniorMechTechF GapN GapS	Units 50% 100% 200% 100% 100%	Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.00	**Rohacell Be **Baseline Cost** \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Support Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.00	Tue 3/ Work 2 h 4 h 8 h 4 h 4 h	14/06 Ovt. Work 0 h 0 h 0 h 0 h	Tue 3/14/0 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h	6 Act. Work 0 h 0 h 0 h	Rem. Work 2 h 4 h 8 h 4 h 4 h	\$0.00	\$419.60	\$419.60	
2.4.3	M&S BO NA Labor E Estimat ID 11 39 40 49 50 51	Disconnect Co Resource Name Physicist SeniorMechEngF SeniorMechTechF GapN Cathedral	Units 50% 100% 200% 100% 200% 200%	Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.00	\$ Rohacell Be Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.00	Tue 3/ Work 2 h 4 h 8 h 4 h 4 h 8 h	14/06 Ovt. Work 0 h 0 h 0 h 0 h 0 h	Tue 3/14/0 Baseline Work Oh Oh Oh Oh Oh	6 Act. Work 0 h 0 h 0 h 0 h 0 h	Rem. Work 2 h 4 h 8 h 4 h 4 h 8 h	\$0.00	\$419.60	\$419.60	
2.4.3	M&S BO NA Labor E Estimat ID 11 39 40 49 50 51 56	BOE- tes are based on Ru Disconnect Co Resource Name PhysicistF SeniorMechEngF SeniorMechTechF GapN GapS Cathedral Dave Buller	Units 50% 100% 200% 100% 200% 100% 100% 100% 10	Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.00 \$0.00 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Support Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.00 \$0.00	Tue 3/ Work 2 h 4 h 8 h 4 h 4 h 4 h 8 h	0vt. Work Ovt. Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Tue 3/14/0 Baseline Work Oh Oh Oh Oh Oh	6 Act. Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Rem. Work 2 h 4 h 8 h 4 h 4 h 8 h 4 h 4 h 8 h 4 h	\$0.00	\$419.60	\$419.60	
2.4.3	M&S BO NA Labor E Estimat ID 11 39 40 49 50 51 56 58 94	Disconnect Co Resource Name Physicistif SeniorMechEngF SeniorMechTechF GapN Cathedral Dave Butler Bill Cooper Dan Olis	Dolant lines Units 50% 100% 200% 100% 200% 100% 50% 100%	\$0.00 \$189.80 \$229.80 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Support Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Tue 3/ Work 2 h 4 h 8 h 4 h 4 h 2 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h	0vt. Work Oh Oh Oh Oh Oh Oh Oh Oh Oh O	Tue 3/14/0 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	6 Act. Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Rem. Work 2 h 4 h 8 h 4 h 8 h 4 h 2 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4	\$0.00	\$419.60	\$419.60	
2.4.3	M&S BO NA Labor E Estimat ID 11 39 40 50 51 56 58	BOE- tes are based on Ru Disconnect Co Resource Name PhysicistF SeniorMechEngF SeniorMechTechF GapN GapS Cathedral Dave Butler Bill Cooper	Units 50% 100% 200% 100% 100% 100% 100% 50%	Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rohacell Be Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Support Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Tue 3/ Work 2 h 4 h 8 h 4 h 4 h 8 h 2 h	0 t. Work Ovt. Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Tue 3/14/0 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	6 Act. Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Rem. Work 2 h 4 h 8 h 4 h 8 h 4 h 2 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4	\$0.00	\$419.60	\$419.60	
2.4.3	M&S BO NA Labor E Estimat 11 39 40 49 50 51 56 58 94 98 Notes	BOE- tes are based on Ru Disconnect Co Resource Name PhysicistF SeniorMechEngF SeniorMechTechF GapN GapS Cathedral Dave Buller Bill Cooper Dan Olis Sasha Leflat	Dolant lines Units 50% 100% 200% 100% 200% 100% 50% 100%	\$0.00 \$189.80 \$229.80 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Support Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Tue 3/ Work 2 h 4 h 8 h 4 h 4 h 2 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h	0vt. Work Oh Oh Oh Oh Oh Oh Oh Oh Oh O	Tue 3/14/0 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	6 Act. Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Rem. Work 2 h 4 h 8 h 4 h 8 h 4 h 2 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4	\$0.00	\$419.60	\$419.60	
2.4.3	M&S BO NA Labor E Estimat 1D 11 39 40 50 51 56 58 94 98 Notes WBS D	Disconnect Co Resource Name PhysicistF SeniorMechEngF SeniorMechTechF GapN GapS Cathedral Dave Buller Bill Cooper Dan Olis Sasha Leflat	Units 50% 100% 200% 100% 200% 100% 100% 100% 10	Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rohacell Be Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Support Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Tue 3/ Work 2 h 4 h 4 h 4 h 4 h 2 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h	14/06 Ovt. Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Tue 3/14/0 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	6 Act. Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Rem. Work 2 h 4 h 8 h 4 h 4 h 2 h 4 h 4 h 4 h 4 h 4 h 4 h			\$419.60	
2.4.3	M&S BO NA Labor E Estimat 1D 11 39 40 50 51 56 58 94 98 Notes WBS D	Disconnect Co Resource Name PhysicistF SeniorMechEngF SeniorMechEngF GapN GapS Cathedral Dave Butler Bill Cooper Dan Olis Sasha Leflat	Units 50% 100% 200% 100% 200% 100% 100% 100% 10	Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rohacell Be Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Support Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Tue 3/ Work 2 h 4 h 4 h 4 h 4 h 2 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h	14/06 Ovt. Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Tue 3/14/0 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	6 Act. Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Rem. Work 2 h 4 h 8 h 4 h 4 h 2 h 4 h 4 h 4 h 4 h 4 h 4 h			\$419.60	
2.4.3	M&S BONA Labor E Estimate ID 11 39 40 49 50 56 58 94 98 Notes WBS D This tass M&S BONA Labor E	Disconnect Co Resource Name PhysicistF SeniorMechEngF SeniorMechTechF GapN GapS Cathedral Dave Butler Bill Cooper Dan Olis Sasha Leflat Definition— sk isolates and cuts. OE- BOE-	Units 50% 100% 200% 100% 200% 100% 200% 100% 10	Cost S0.00 \$199.80 \$229.80 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Support Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 plugs dry air pu	Tue 3/ Work 2 h 4 h 8 h 4 h 4 h 2 h 4 h 4 h 2 h 4 h 4 h 4 h 2 h 4 h 4 h	14/06 Ovt. Work Oh	Tue 3/14/0 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	Act. Work Oh	Rem. Work 2 h 4 h 8 h 4 h 4 h 2 h 4 h 4 h 4 h 4 h 4 h 4 h			\$419.60	
2.4.3	M&S BONA Labor E Estimate ID 11 39 40 49 50 56 58 94 98 Notes WBS D This tass M&S BONA Labor E	Disconnect Co Resource Name PhysicistF SeniorMechEngF SeniorMechTechF GapN GapS Cathedral Dave Butler Bill Cooper Dan Olis Sasha Leflat Definition— sk isolates and cuts. OE- BOE-	Units 50% 100% 200% 100% 200% 100% 200% 100% 10	Cost S0.00 \$199.80 \$229.80 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Support Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 plugs dry air pu	Tue 3/ Work 2 h 4 h 8 h 4 h 4 h 2 h 4 h 4 h 2 h 4 h 4 h 4 h 2 h 4 h 4 h	14/06 Ovt. Work Oh	Tue 3/14/0 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	Act. Work Oh	Rem. Work 2 h 4 h 8 h 4 h 4 h 2 h 4 h 4 h 4 h 4 h 4 h 4 h			\$419.60	
	M&S BONA Labor E Estimat ID 11 39 40 49 50 56 58 94 98 Notes WBS D This tas M&S BONA Labor E	Disconnect Co Resource Name PhysicistF SeniorMechEngF SeniorMechTechE GapN GapS Cathedral Dave Buller Bill Cooper Dan Olis Sasha Leflat Definition- sk isolates and cuts OE- des are based on Ru	Units 50% 100% 100% 100% 100% 100% 100% 100%	Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Support Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 plugs dry air pu	Tue 3/ Work 2 h 4 h 8 h 4 h 4 h 4 h 4 h 4 h 2 h 4 h 4 h 3 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4	14/06 Ovt. Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	Tue 3/14/0 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	Act. Work Oh Oh Oh Oh Oh Oh Oh Oh String Oh Oh String Oh Oh Oh String Oh	Rem. Work 2 h 4 h 8 h 4 h 4 h 4 h 2 h 4 h 4 h 4 h 2 h 4 h 4	acell Be beam pipe s	supports.		
	M&S BO NA Labor E Estimat ID 11 39 40 49 50 51 56 58 94 98 Notes WBS D This tas M&S BO NA Labor E Estimat	Disconnect Co Resource Name PhysicistF SeniorMechEngF SeniorMechTechF GapN GapS Cathedral Dave Butler Bill Cooper Dan Olis Sasha Leflat definition- sk isolates and cuts OE- Install H-disk I	Units 50% 100% 100% 100% 100% 100% 100% 100%	Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Support Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$0.00 \$189.80 \$229.80 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 plugs dry air pu	Tue 3/ Work 2 h 4 h 8 h 4 h 4 h 4 h 4 h 4 h 2 h 4 h 4 h 4 h 4 h 4 h 4 h Warge suppl	14/06 Ovt. Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	Tue 3/14/0 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	Act. Work Oh Oh Oh Oh Oh Oh Oh Stallation.	Rem. Work 2 h 4 h 8 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 7 h 7 h 7 h 7 h 7 h 7 h 7 h 7 h 7 h 7			\$419.60 \$379.60	
.2.4.3	M&S BO NA Labor E Estimat ID 11 39 40 49 50 51 56 58 94 98 Notes WBS D This tas M&S BO NA Labor E Estimat	Disconnect Co Resource Name PhysicistF SeniorMechEngF SeniorMechEngF SeniorMechTechE GapN Cathedral Dave Butler Bill Cooper Dan Olis Sasha Leflat Definition- sk isolates and cuts OCE- Install H-disk I Resource Name PhysicistF	Units 50% 100% 100% 100% 100% 100% 100% 100%	Cost \$0.00 \$199.80 \$229.80 \$0.00 \$0.	Baseline Cost \$0.00	Support Act. Cost \$0.00	Rem. Cost \$0.00 \$189.80 \$0.00	Tue 3/ Work 2 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 2 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4	14/06 Ovt. Work Oh	Tue 3/14/0 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	Act. Work Oh	Rem. Work 2 h 4 h 8 h 4 h 2 h 2 h 7 h 8 h 7 h 8 h 7 h 8 h 7 h 8 h 8 h 7 h 8 h 8 h 8 h 8 h 8 h 8 h 8 h 8 h 8 h 8	acell Be beam pipe s	supports.		
	M&S BONA Labor E Estimat ID 11 39 39 40 49 50 51 56 58 94 98 Notes WBS D D This tas M&S BONA Labor E Estimat	Disconnect Co Resource Name PhysicistF SeniorMechEngF	Units 50% 100% 200% 100% 200% 100% 50% 100% 50% 100% 50% 100% 100%	Cost \$0.00 \$199.80 \$229.80 \$0.00 \$0.	Baseline Cost St. to outer H-disks Baseline Cost \$0.00	Support Act. Cost \$0.00	Rem. Cost \$0.00 \$189.80 \$0.00	Tue 3/ Work 2 h 4 h 8 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4	14/06 Ovt. Work Oh	Tue 3/14/0 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	Act. Work Oh	## Rem. Work 2 h	acell Be beam pipe s	supports.		
	## M&S BO NA Labor E Estimat ## ID ## 11 ## 39 ## 40 ## 49 ## 56 ## 58 ## 98 ## M&S BO NA Labor E Estimat ## ID ## 11 ## 39 ## 49 ## 50 ## 11 ## 39 ## 30 ##	Disconnect Co Resource Name PhysicistF SeniorMechEngF SeniorMechEngF SeniorMechTechF GapN Cathedral Dave Butler Bill Cooper Dan Olis Sasha Leflat Definition- sk isolates and cuts. OE- Install H-disk I Resource Name PhysicistF SeniorMechEngF GapN	Units 50% 100% 100% 100% 100% 100% 100% 100%	Cost \$0.00 \$199.80 \$229.80 \$0.00 \$0.	Baseline Cost \$0.00	Support Act. Cost \$0.00	Rem. Cost \$0.00 \$189.80 \$0.00	Tue 3/ Work 2 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 2 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4	14/06 Ovt. Work Oh	Tue 3/14/0 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	Act. Work Oh	Rem. Work 2 h 4 h 8 h 4 h 2 h 2 h 7 h 8 h 7 h 8 h 7 h 8 h 7 h 8 h 8 h 7 h 8 h 8 h 8 h 8 h 8 h 8 h 8 h 8 h 8 h 8	acell Be beam pipe s	supports.		
	M&S BO NA Labor E Estimat ID 111 39 40 49 50 51 56 58 94 98 Notes WBS D This tas M&S BO NA Labor E Estimat	Disconnect Co Resource Name PhysicisIF SeniorMechEngF SeniorMechEngF SeniorMechTechF GapN Cathedral Dave Butler Bill Cooper Dan Oils Sasha Leflat Definition- sk isolates and cuts. OE- BISTORE BISTOR	Units 50% 100% 200% 100% 200% 100% 200% 100% 200% 100% 50% 100% 100% 100% 100% 100% 10	Cost \$0.00 \$199.80 \$229.80 \$0.00	Baseline Cost Baseline Cost \$0.00	Support Act. Cost \$0.00	Rem. Cost \$0.00 \$159.80 \$0.00 \$159.80 \$0.00	Tue 3/ Work 2 h 4 h 8 h 4 h 8 h 4 h 4 h 4 h 2 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4	14/06 Ovt. Work Oh	Tue 3/14/0 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	Act. Work Oh	\$0.00 Rem. Work 2 h 4 h 8 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 8 moves split Roh \$0.00 Rem. Work 4 h 8 h 8 h 8 h 8 h 8 h 8 h 8 h 8 h	acell Be beam pipe s	supports.		
	## M&S BO NA Labor E Estimat ## ID ## 11 ## 39 ## 40 ## 49 ## 56 ## 58 ## 98 ## M&S BO NA Labor E Estimat ## ID ## 11 ## 39 ## 49 ## 50 ## 11 ## 39 ## 30 ##	Disconnect Co Resource Name PhysicistF SeniorMechEngF SeniorMechEngF SeniorMechTechF GapN Cathedral Dave Buller Dan Olis Sasha Leflat Definition- sk isolates and cuts OE- Install H-disk i Resource Name PhysicistF SeniorMechEngF GapN GapS	Units 50% 100% 100% 200% 100% 50% 100% 50% 100% 50% 100% 100%	Cost \$0.00 \$199.80 \$0.00	Baseline Cost St. oouter H-disks Baseline Cost \$0.00	Support Act. Cost \$0.00	Rem. Cost \$0.00 \$189.80 \$229.80 \$0.00	Tue 3/ Work 2 h 4 h 8 h 4 h 2 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4 h 4	14/06 Ovt. Work Oh	Tue 3/14/0 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	Act. Work Oh	\$0.00 Rem. Work 2 h 4 h 8 h 4 h 4 h 4 h 2 h 4 h 4 h 4 h 4 h 8 h 8 h 8 h 8 h 8 h 8 h	acell Be beam pipe s	supports.		

Notes
WBS DefinitionThis task installs the H-disk removal fixtures.

M&S EQ WBS Name Start Finish M&S Labor FNAL Labor **Total Cost** M&S BOE-Labor BOE-Estimates are based on Run2a installation experience, reduced by considerations of the expected simpler task of removal as compared with installation. \$0.00 \$0.00 \$514.50 1.5.2.4.5 \$514.50 Remove N&S Outer H-Disks Thu 3/16/06 Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work PhysicistF 125% 5 h 39 40 49 SeniorMechEngF \$284.70 SeniorMechTechF 200% \$229.80 \$0.00 \$0.00 \$229.80 8 h 0 h 0 h 0 h 8 h 200% GanN \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 0 h 8 h 50 51 200% \$0.00 GanS \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 0 h 8 h Cathedral 500% \$0.00 \$0.00 \$0.00 \$0.00 20 h 0 h 0 h 20 h 0 h 55 Linda Bagby 100% \$0.00 \$0.00 \$0.00 \$0.00 4 h 0 h 0 h 0 h 4 h 56 58 Dave Butler 100% \$0.00 \$0.00 \$0.00 \$0.00 4 h 0 h 0 h 0 h 4 h Bill Cooper 25% \$0.00 \$0.00 \$0.00 \$0.00 1 h Ωh Ωh Ωh 1 h 94 Dan Olis 50% \$0.00 \$0.00 \$0.00 \$0.00 2 h 2 h 0 h 0 h 0 h 95 Joe Howell 100% \$0.00 \$0.00 \$0.00 \$0.00 4 h 0 h 0 h 0 h 4 h Sasha Leflat 100% \$0.00 4 h 0 h 4 h 99 Chris Tolian 100% \$0.00 \$0.00 \$0.00 \$0.00 4 h 0 h 0 h 0 h 4 h Notes WBS Definition-This task installs removes the outer H-disks from CFT barrel 3. The H disks are inserted in existing handling cases and removed from the work area. Change H-disk coolant flow nozzels for L0 if necessary. M&S BOE-Labor BOE-Estimates are based on Run2a installation experience, reduced by considerations of the expected simpler task of removal as compared with installation. 1.5.2.4.6 \$0.00 \$0.00 \$0.00 \$0.00 Make Be assay of beampipes Thu 3/16/06 Tue 3/21/06 ID Units Rem. Cost Work Ovt. Work Rem. Work Resource Name Cost Baseline Cost Act. Cost Baseline Work Act. Work 49 GapN GapS 100% \$0.00 \$0.00 \$0.00 \$0.00 24 h 0 h0 h 0h24 h 50 100% \$0.00 \$0.00 24 h 0 h 24 h \$0.00 \$0.00 0 h 0 h WBS Definition-This task permits ES&H technician to make Be wipes of exposed Runlla Be pipe surfaces, send out for analysis. Further direct work on (i.e. handling) Be pipe awaits results of analysis. M&S BOE-NA Labor BOE-Estimates are based on Run2a installation experience. 1.5.2.4.7 Uncable Inner H disks Thu 3/16/06 Fri 3/17/06 \$0.00 \$0.00 \$720.00 \$720.00 Resource Name Ovt. Work Rem. Work ID Units Cost Baseline Cost Act. Cost Rem. Cost Work Baseline Work Act. Work 11 PhysicistF 100% \$0.00 \$0.00 \$0.00 \$0.00 0 h 8 h 0 h \$0.00 38 49 SeniorElecTechF 300% \$720.00 \$0.00 \$720.00 24 h 0 h 0 h 24 h 200% \$0.00 \$0.00 16 h 0 h 0 h 0 h GapN \$0.00 16 h 50 \$0.00 GapS 100% \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 8 h 0 h 51 55 \$0.00 Cathedrai 400% \$0.00 \$0.00 \$0.00 32 h 0 h 0 h 0 h 32 h Linda Bagby 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 0 h 8 h 56 Dave Butler 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 0 h 8 h 69 99 John Fogelsong Chris Tolian 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h 8 h 0 h 0 h 0 h 0 h 8 h 8 h \$0.00 100% \$0.00 0 h Notes This task disconnects and rerouts the low mass cables (48 per side) from the N & S inner H disks. This task assumes this work can be undertaken while the Be assay is in progress. M&S BOE-NA Labor BOE-Estimates are based on Run2a installation experience, reduced by considerations of the expected simpler task of removal as compared with inst 1.5.2.4.8 Install H-disk removal fixtures Fri 3/17/06 Mon 3/20/06 \$0.00 \$0.00 \$379.60 \$379.60 Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work Physicist 50% \$0.00 \$0.00 0 h 39 SeniorMechEnal 100% \$379.60 \$0.00 \$0.00 \$379.60 8 h 0 h 0 h 0 h 8 h 49 GapN 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 0 h 8 h 50 51 GanS 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 0h8 h \$0.00 0 h 0 h Cathedral 200% \$0.00 \$0.00 \$0.00

Install H-disk removal fixtures" continued	Finish M&S EQ	M&S Labor	FNAL Labor	Total Cost
	line Work Act. Work Rem. Work			
56 Dave Butler 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 58 Bill Cooper 50% \$0.00 \$0.00 \$0.00 \$0.00 4 h 0 h	0h 0h 8h 0h 0h 4h			
99 Chris Tolian 100% \$0.00 \$0.00 \$0.00 \$0.00 8h 0h	0h 0h 8h			
Notes WBS Definition-				
This task isolates and cuts/disconnects coolant lines for inner H-disks, disconnects and plugs the dry air purge for them and inst	alls the H-disk removal fixtures. This task	assumes this work can h	e undertaken while th	e Be assay is in progress
This task totales and satisfactor meets coolant interior of lines in allow, disconnects and plays the dry all parge for them and make	and the Francischemoval fixtures. This task	assames this work can b	e dilacitateri wille ti	e De assay is in progress.
M&S BOE-				
NA NA				
Labor BOE-				
Estimates are based on Run2a installation experience, reduced by considerations of the expected simpler task of removal as co	mpared with installation			
	<u> </u>			*
	Mon 3/20/06 \$0.00	\$0.00	\$514.50	\$514.50
	eline Work Act. Work Rem. Work	_		
11 PhysicistF 125% \$0.00 \$0.00 \$0.00 \$0.00 5 h 0 h	0h 0h 5h			
39 SeniorMechEngF 150% \$284.70 \$0.00 \$0.00 \$284.70 6 h 0 h 40 SeniorMechTechF 200% \$229.80 \$0.00 \$0.00 \$229.80 8 h 0 h	0h 0h 6h 0h 0h 8h			
49 GapN 200% \$0.00 \$0.00 \$0.00 \$0.00 8h 0h	0h 0h 8h			
50 GapS 200% \$0.00 \$0.00 \$0.00 \$0.00 8h 0h	0h 0h 8h			
51 Cathedral 500% \$0.00 \$0.00 \$0.00 \$0.00 20 h 0 h	0 h 0 h 20 h			
55 Linda Bagby 100% \$0.00 \$0.00 \$0.00 \$0.00 4 h 0 h 56 Dave Butler 100% \$0.00 \$0.00 \$0.00 \$0.00 4 h 0 h	0h 0h 4h			
56 Dave Butler 100% \$0.00 \$0.00 \$0.00 \$0.00 4 h 0 h 58 Bill Cooper 25% \$0.00 \$0.00 \$0.00 \$0.00 1 h 0 h	0h 0h 4h 0h 0h 1h			
58 Bill Cooper 25% \$0.00 \$0.00 \$0.00 \$0.00 1 h 0 h 94 Dan Olis 50% \$0.00 \$0.00 \$0.00 \$0.00 2 h 0 h	0h 0h 2h			
95 Joe Howell 100% \$0.00 \$0.00 \$0.00 \$0.00 4 h 0 h	0 h 0 h 4 h			
98 Sasha Leflat 100% \$0.00 \$0.00 \$0.00 \$0.00 4 h 0 h	0 h 0 h 4 h			
99 Chris Tolian 100% \$0.00 \$0.00 \$0.00 \$0.00 4 h 0 h	0 h 0 h 4 h			
Notes				
WBS Definition-				
This task removes the inner Hdisks from CFT barrel 3. The H disks are inserted in existing handling cases and removed from	the work area. This task assumes this wo	rk can be undertaken wh	ile the Be assay is in	progress.
MAC POF				
M&S BOE- NA				
IVA				
Labor BOE-				
	npared with installation.			
Estimates are based on Run2a installation experience, reduced by considerations of the expected simpler task of removal as con				
Esumates are based on Kunza installation experience, reduced by considerations of the expected simpler task of removal as co				
	Mon 3/20/06 \$0.00	\$0.00	\$0.00	\$0.00
	Mon 3/20/06 \$0.00	\$0.00	\$0.00	\$0.00
5.2.4.10 H-disks Removal Complete Mon 3/20/06 Notes WBS Definition-	Mon 3/20/06 \$0.00	\$0.00	\$0.00	\$0.00
5.2.4.10 H-disks Removal Complete Mon 3/20/06	Mon 3/20/06 \$0.00	\$0.00	\$0.00	\$0.00
5.2.4.10 H-disks Removal Complete Mon 3/20/06 Notes WBS Definition-	Mon 3/20/06 \$0.00	\$0.00	\$0.00	\$0.00
5.2.4.10 H-disks Removal Complete Mon 3/20/06 Notes WBS Definition- Milestone-H-disk Removal Complete				
5.2.4.10 H-disks Removal Complete Mon 3/20/06 Notes WBS Definition- Milestone-H-disk Removal Complete 5.2.5 Remove Run IIa Be Beampipe via NEC Tue 3/21/06	Wed 3/29/06 \$0.00	\$0.00 \$0.00	\$0.00 \$11,199.80	\$0.00 \$11,199.80
i.2.4.10 H-disks Removal Complete Notes WBS Definition- Milestone-H-disk Removal Complete i.2.5 Remove Run IIa Be Beampipe via NEC ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Ba	Wed 3/29/06 \$0.00 seline Work	\$0.00		
5.2.4.10 H-disks Removal Complete Notes WBS Definition- Milestone-H-disk Removal Complete 5.2.5 Remove Run IIa Be Beampipe via NEC ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Cost Society of Society So	Wed 3/29/06 \$0.00 seline Work Act. Work Rem. Work 48 h	\$0.00		
Notes WBS Definition- Milestone-H-disk Removal Complete Work Notes	Wed 3/29/06 \$0.00 seline Work	\$0.00		
Notes	Wed 3/29/06 \$0.00 seline Work Act. Work Rem. Work 48 h	\$0.00		
Notes	Wed 3/29/06 \$0.00 seline Work Act. Work Rem. Work 48 h	\$0.00		
Notes WBS Definition- Milestone-H-disk Removal Complete Mon 3/20/06	Wed 3/29/06 \$0.00 seline Work Act. Work Rem. Work 48 h	\$0.00		
Second S	Wed 3/29/06 \$0.00 seline Work Act. Work Rem. Work 48 h	\$0.00		
Notes	Wed 3/29/06 \$0.00 seline Work Act. Work Rem. Work 0 h 0 h 48 h 0 h 0 h 48 h	\$0.00	\$11,199.80	\$11,199.80
5.2.4.10 H-disks Removal Complete Notes WBS Definition- Milestone-H-disk Removal Complete 5.2.5 Remove Run IIa Be Beampipe via NEC ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Ba 39 SeniorMechEngF 100% \$2,277.60 \$0.00 \$0.00 \$2,277.60 48 h 0 h Notes WBS Definition- This summary task removes RunIIa Be Beampipe. 5.2.5.1 Install Be pipe handling equipment in N Gap, Brunson in S gar Tue 3/21/06	Wed 3/29/06 \$0.00 seline Work Act. Work Rem. Work 0 h 0 h 48 h 0 h 0 h 48 h Wed 3/22/06 \$0.00	\$0.00		
5.2.4.10 H-disks Removal Complete Notes WBS Definition- Milestone-H-disk Removal Complete 5.2.5 Remove Run IIa Be Beampipe via NEC ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Cost Security S	Wed 3/29/06 \$0.00 Seline Work	\$0.00	\$11,199.80	\$11,199.80
Notes	Wed 3/29/06 \$0.00 seline Work	\$0.00	\$11,199.80	\$11,199.80
Notes West Section Section Work Section Se	Wed 3/29/06 \$0.00 seline Work	\$0.00	\$11,199.80	\$11,199.80
Notes WBS Definition- Milestone-H-disk Removal Complete	Wed 3/29/06 \$0.00 seline Work	\$0.00	\$11,199.80	\$11,199.80
Notes WBS Definition- Milestone-H-disk Removal Complete Mon 3/20/06	Wed 3/29/06 \$0.00 seline Work	\$0.00	\$11,199.80	\$11,199.80
Notes	Wed 3/29/06 \$0.00 Seline Work Act. Work Act. Work Act. Work Act. Work Wed 3/22/06 \$0.00 aseline Work Act. Work Rem. Work 0 h 0 h 0 h 32 h 0 h 0 h 16 h	\$0.00	\$11,199.80	\$11,199.80
Notes Was Definition- Milestone-H-disk Removal Complete Section Mon 3/20/06	\$0.00 \$0.0	\$0.00	\$11,199.80	\$11,199.80
Notes WBS Definition- Milestone-H-disk Removal Complete	Wed 3/29/06 \$0.00 seline Work	\$0.00	\$11,199.80	\$11,199.80
Section Sect	Wed 3/29/06 \$0.00 seline Work	\$0.00	\$11,199.80	\$11,199.80
Date Remove Run IIa Be Beampipe via NEC Tue 3/21/06	Wed 3/29/06 \$0.00 Rem. Work Act. Work Act. Work Ads h Ad	\$0.00	\$11,199.80	\$11,199.80
Notes Work Specific Work Work Specific Work Specific Work Specific Work Specific Spe	Wed 3/29/06 \$0.00 seline Work	\$0.00	\$11,199.80	\$11,199.80

Notes

WBS DefinitionThis task installs the L0 tables & rails in the N gap, mounts Brunson in S gap to sight clearances of beampipe during removal (purge bags removed to facilitate this), replaces N outflow purge bag on end of Be pipe, moves Be pipe ~ 5" N, attaches forward stage clamp to N end of Be pipe to support it, removes Be pipe supports on N SMT membrane, moves Be pipe 11" N, attach secondary stage clamp to Be pipe in N gap, remove S Be supports on SMT membrane.

M&S EQ WBS Name Start Finish M&S Labor FNAL Labor **Total Cost** equipment in N Gap, Brunson in S gap, begin removal of Be pipe" continued M&S BOE-NA Labor BOE-Runlla experience from original Be pipe installation. 1.5.2.5.2 Wed 3/22/06 Thu 3/23/06 \$0.00 \$0.00 \$1,598.40 \$1,598.40 Remove N Gap Stages, Rails Retract Be pipe to NEC. Resource Name Units Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work Physicist 100% SeniorMechEngF \$1,138.80 \$1,138.80 40 49 \$459.60 \$0.00 SeniorMechTechF 200% \$459.60 \$0.00 \$0.00 16 h 0 h 0 h 0 h 16 h GanN 200% \$0.00 \$0.00 \$0.00 16 h 0 h 0 h 0 h 16 h 51 56 0 h Cathedral 300% \$0.00 \$0.00 \$0.00 \$0.00 24 h 0 h 0 h 24 h 100% \$0.00 \$0.00 \$0.00 0 h 0 h Dave Butler 8 h 0 h 58 Bill Cooper 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 0 h 8 h 74 93 Youri Orlov 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 0 h 8 h Mike Roman 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h Ωh Ωh Ωh 8 h 94 Dan Olis 100% \$0.00 \$0.00 \$0.00 0 h 0h0 h \$0.00 8 h 8 h Notes WBS Definition-This task continues Be motion N (remove EC pipe purge plug) out of SMT into N EC pipe (while managing purge there) until Be pipe clears tracker and is fully inside N EC pipe and unattached from stage mounts. Remove stages, rails, tables from N gap. Pull N EC beampipe inward to lock collapsible spacer in extended position, and deploy purge lines appropriately. M&S BOE-NA Labor BOE-Runlla experience from original Be pipe installation. 1.5.2.5.3 Close ECN, EFN, Make Work Platform at EFN Thu 3/23/06 Fri 3/24/06 \$0.00 \$0.00 \$1,298.80 \$1,298.80 Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work SeniorMechEngl 100% \$379.60 \$0.00 \$0.00 40 SeniorMechTechF 400% \$919.20 \$0.00 \$0.00 \$919.20 32 h 0 h 0 h 0 h 32 h 49 GanN 200% \$0.00 \$0.00 \$0.00 \$0.00 16 h 0 h 0 h 0 h 16 h 50 51 GanS 200% \$0.00 \$0.00 \$0.00 \$0.00 16 h 0 h 0 h 0 h 16 h 200% \$0.00 \$0.00 16 h 0 h 0 h 0 h Cathedra. \$0.00 \$0.00 16 h 105 Jim Fagan 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 8 h This task removes access hardware in N gap, closes ECN, installs ladder(s) to beam pipe, blocks motion of ECN beampipe with temporary bar, removes ladders, closes EFN and EFN and installs a work platform on shield arms, M&S BOE-NA Labor BOF-Runlla experience 1.5.2.5.4 Thu 3/23/06 Fri 3/24/06 \$0.00 \$0.00 \$1,298.80 \$1,298.80 Remove table & brunson, install S gap work scaffold Baseline Cost Work Ovt. Work Baseline Work Rem. Work Resource Name Units Cost Act. Cost Rem. Cost Act. Work 39 SeniorMechEngl 100% \$379.60 \$0.00 \$0.00 \$379.60 8 h Ωh 0h8 h 40 SeniorMechTechF \$919.20 \$0.00 \$0.00 \$919.20 0 h 0 h 0 h 32 h 400% 32 h 49 GapN 200% \$0.00 \$0.00 \$0.00 \$0.00 16 h 0 h 0 h 0 h 16 h 50 GapS 200% \$0.00 \$0.00 \$0.00 16 h 0 h 51 Cathedral 400% \$0.00 \$0.00 \$0.00 \$0.00 32 h 0 h 0 h 0 h 32 h 105 Jim Fagan 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 0 h 8 h Notes WBS Definition-This task removes the Brunson and table as needed from the S gap to allow elelctrical work there. M&S BOE-NA Labor BOE-Runlla experience from 2004 shutdown. 1.5.2.5.5 Fri 3/24/06 Fri 3/24/06 \$0.00 \$0.00 \$649.40 \$649.40 Remove Be pipe from Collision Hall Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work 39 SeniorMechEngF \$189.80 \$0.00 \$0.00 \$189.80 100% 4 h 4 h 0 h 0 h 0 h SeniorMechTechF 400% \$459.60 \$0.00 \$0.00 \$459.60 16 h 0 h 0 h 0 h 16 h 105 Jim Fagan 100% \$0.00 \$0.00 \$0.00 \$0.00 4 h 0 h 0 h 0 h 4 h Notes

This task remove Be pipe from ECN beampipe: Remove collapsible beampipe spacer, negotiate Be pipe past quad and out of iron; place in storage container and remove purge line and move container to Si cage area an reestablish purge. Plug ECN pipe with baffeled stopper.

M&S EQ WBS Name Start Finish M&S Labor FNAL Labor **Total Cost** "Remove Be pipe from Collision Hall" continued Notes M&S BOE-NA Labor BOE-Runlla experience from original Be pipe installation plus careful consideration of pipe purge management. 1.5.2.5.6 Install New Adapter Cards, LV cables in S Gap Fri 3/24/06 Wed 3/29/06 \$0.00 \$0.00 \$2.098.80 \$2.098.80 Resource Name Units Baseline Cost Work Ovt. Work Baseline Work Act. Work Rem. Work Cost Act. Cost Rem. Cost 11 PhysicistF \$0.00 \$0.00 24 h 24 h \$0.00 38 SeniorElecTechF 100% \$720.00 \$0.00 \$0.00 \$720.00 24 h 0 h 0 h 0 h 24 h 40 50 SeniorMechTechF 200% \$1,378.80 \$0.00 \$0.00 \$1,378.80 48 h 0 h 48 h GanS 200% \$0.00 \$0.00 \$0.00 \$0.00 48 h Ωh Ωh Ωh 48 h 51 400% \$0.00 \$0.00 \$0.00 0 h Cathedral \$0.00 96 h 0 h 0 h 96 h 55 Linda Bagby 100% \$0.00 \$0.00 \$0.00 \$0.00 24 h 0 h 0 h 0 h 24 h 100% \$0.00 \$0.00 \$0.00 \$0.00 24 h 0 h 0 h 0 h 24 h Dave Butler 69 John Fogelsong 100% \$0.00 \$0.00 \$0.00 \$0.00 24 h 0 h 0 h 0 h 24 h 99 Chris Tolian 100% \$0.00 \$0.00 \$0.00 \$0.00 24 h 0 h 0 h 0 h 24 h WBS Definition-This task removes old Adapter Cards and standoffs in S gap, installs new standoffs and AC's, installs LV and Temp Mon AWG-change panels, connects 12 10AWG LV cable from fuse panel to AWG-change panel, 22 AWG jumpers from AWG-change panel to AC. Operates power supplies. Time is allowed to test AC's with walking Junction card. M&S BOE-Labor BOE-Runlla experience from original AC installation forms the basis of estimate for effort. 1.5.2.5.7 Wed 3/29/06 Wed 3/29/06 \$0.00 \$0.00 \$0.00 Run IIa Beampipe Removal Complete \$0.00 WBS Definition-Milestone-Runlla Be pipe removal completed. 1.5.2.6 Load L0 and Runll Be pipe in ECN Beampipe Wed 3/29/06 Fri 3/31/06 \$0.00 \$0.00 \$4,490.50 \$4,490.50 ID Resource Name Cost Baseline Cost Act. Cost Rem. Cost Work Baseline Work Rem. Work Units Ovt. Work Act. Work 0 h 0 h 39 SeniorMechEnal 100% \$949.00 \$0.00 \$0.00 \$949.00 20 h 0 h 0 h 20 h \$0.00 \$0.00 \$0.00 \$0.00 20 h 0 h 0 h 20 h Russ Rucinski 100% Notes WBS Definition-This summary task brings L0 and RunIIb Be pipe to DAB and loads them in the NEC beampipe 1.5.2.6.1 \$0.00 \$1.483.50 \$0.00 \$1,483,50 Make dry run with dummy L0 Wed 3/29/06 Thu 3/30/06 Act. Cost Ovt. Work Baseline Work Act. Work Rem. Work ID Resource Name Units Cost Baseline Cost Rem. Cost Work \$0.00 Physicist 100% \$0.00 12 h 12 h 11 \$0.00 \$0.00 0h39 SeniorMechEnaF 200% \$1,138,80 \$1,138,80 24 h 0 h 0 h 24 h \$0.00 \$0.00 0 h 40 56 SeniorMechTechF 100% \$344.70 \$0.00 \$0.00 \$344.70 12 h 12 h 0 h 0 h 0 h Dave Butler 100% \$0.00 \$0.00 \$0.00 \$0.00 12 h 0 h 0 h 0 h 12 h 58 Bill Cooper 100% \$0.00 \$0.00 \$0.00 \$0.00 12 h 0 h 0 h 0 h 12 h 74 93 12 h 12 h 12 h 12 h Youri Orlov 100% \$0.00 \$0.00 \$0.00 \$0.00 0 h 0 h 0 h 0 h 100% Mike Roman \$0.00 \$0.00 \$0.00 \$0.00 0 h 0 h 95 100% \$0.00 \$0.00 \$0.00 12 h 12 h Joe Howell \$0.00 0 h 0 h 0 h Notes WBS Definition-This task moves ECN pipe (on scissors jack) 13" away from tracker, installs rail with H&V stages in EFN, attaches dummy L0 carrier box (with dummy L0 inside) to table, rough aligns stages with ECN pipe, remove carrier from stages and lay aside in shield, remove stopper from ECN pipe, replace carrier on stages, open carrier and slide dummy L0 into ECN pipe. Adjust stages to permit safe motion of L0 dummy. Attach fish to dummy L0 and move it to inner stopper. Measure distance in pipe, remove dummy L0, place in carrier and remove from collision hall. M&S BOE-NA Labor BOE-Runlla experience with beam pipes. 1.5.2.6.2 Fri 3/31/06 Load L0 and RunlIBe pipe in ECN Fri 3/31/06 \$0.00 \$0.00 \$2,058.00 \$2,058.00 Resource Name Units Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Physicist \$0.00 \$0.00 \$0.00 \$0.00 8 h

BS		Name						S	art	Finish	N	1&S EQ	M&S Labor	FNAL Labor	Total Cost
oad L0	and Rur	IIBe pipe in ECN	l" continu	ed											
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work		Act. Work	Rem. Work	_		
	39 40	SeniorMechEngF SeniorMechTechF	300% 400%	\$1,138.80 \$919.20	\$0.00 \$0.00	\$0.00 \$0.00	\$1,138.80 \$919.20	24 h 32 h	0 h 0 h	0 h 0 h	0 h 0 h	24 h 32 h			
	50	GapS	200%	\$0.00	\$0.00	\$0.00	\$0.00	16 h	0 h	0 h	0 h	16 h			
	56 58	Dave Butler Bill Cooper	100% 100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	8 h 8 h	0 h 0 h	0 h 0 h	0 h 0 h	8 h 8 h			
	74	Youri Orlov	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h			
	93 95	Mike Roman	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h			
		Joe Howell	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h			
	Notes	efinition-													
	This tas	sk moves L0 into CH								he proper distance, moves ECN beampipe to					in EF shield hole, cleans Be pipe pa
	M&S BO	OE-													
	Labor B Runlla	OE- experience with beam	n pipes.												
5.2.6.3		L0 and Be Pipe	e in ECN	Beampipe	<u> </u>			Fri 3/31	/06	Fri 3/31/06		\$0.00	\$0.00	\$0.00	\$0.00
	Notes											•	• • • • • •	*****	•
	WBS D	efinition-	=												
	Milestor	ne-L0 and Be pipe loa	aded in ECN	N beampipe.											
.2.7		Open ECN, Ins	tall L0 In	stallation	_			Mon 4/3		Tue 4/11/06		\$0.00	\$0.00	\$11,799.00	\$11,799.00
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost		Ovt. Work		ct. Work	Rem. Work	•		
	39 59	SeniorMechEngF Russ Rucinski	100% 100%	\$2,467.40 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$2,467.40 \$0.00	52 h 52 h	0 h 0 h	0 h 0 h	0 h 0 h	52 h 52 h			
	Notes			*****	*****	*****	*****		***	***	***				
	This sur	mmary task opens E0	CN, Installs	N gap access	s hardware and L0) Installation i	rails, stages								
.2.7.1		Remove N scaf	folding, O	pen EFN a	and ECN, Insta	all Gap acc	es	Mon 4/3	/06	Mon 4/3/06		\$0.00	\$0.00	\$1,298.80	\$1,298.80
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work		lct. Work	Rem. Work	_		
	39 40	SeniorMechEngF SeniorMechTechF	100% 400%	\$379.60 \$919.20	\$0.00 \$0.00	\$0.00 \$0.00	\$379.60 \$919.20	8 h 32 h	0 h 0 h	0 h 0 h	0 h 0 h	8 h 32 h			
	49	GapN	200%	\$0.00	\$0.00	\$0.00	\$0.00	16 h	0 h	0 h	0 h	16 h			
	51 105	Cathedral Jim Fagan	100% 100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	8 h 8 h	0 h 0 h	0 h 0 h	0 h 0 h	8 h 8 h			
		Jilli Fayali	100%	\$0.00	\$0.00	\$0.00	\$0.00	011	011	011	UII	011			
	Notes WRS D	efinition-													
			orm and sca	affolding at E	CN, retracts shield	d arms back ir	nto C truss, ope	ens EFN, EC	N. Installs I	N Gap access hardwa	re.				
		•		3	,			,							
	M&S BO	OE-													
	NA														
	Labor B														
	Runlla	experience.													
2.7.2		Install New Ada	pter Card	ls, LV cabl	es in N Gap			Tue 4/4	/06	Thu 4/6/06		\$0.00	\$0.00	\$2,098.80	\$2,098.80
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work			
	11	PhysicistF	100%	\$0.00	\$0.00	\$0.00	\$0.00	24 h	0 h	0 h	0 h	24 h	=		
	38 40	SeniorElecTechF SeniorMechTechF	100% 200%	\$720.00 \$1,378.80	\$0.00 \$0.00	\$0.00 \$0.00	\$720.00 \$1,378.80	24 h 48 h	0 h 0 h	0 h 0 h	0 h 0 h	24 h 48 h			
	50	GapS	200%	\$0.00	\$0.00	\$0.00	\$0.00	48 h	0 h	0 h	0 h	48 h			
	51 55	Cathedral Linda Bagby	400% 100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	96 h 24 h	0 h 0 h	0 h 0 h	0 h 0 h	96 h 24 h			
	56	Dave Butler	100%	\$0.00	\$0.00	\$0.00	\$0.00	24 h	0 h	0 h	0 h	24 h			
	69 99	John Fogelsong Chris Tolian	100% 100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00	24 h 24 h	0 h 0 h	0 h 0 h	0 h 0 h	24 h 24 h			
	99	Install levels on				, , , , ,	\$0.00	Mon 4/3		Mon 4/3/06	υn	\$0.00	\$0.00	\$989.00	\$989.00
2.7.3													Ψ3.00	\$300.00	Ψ000.00
.2.7.3	ID				Baseline Cost	Act. Cost	Rem. Cost	Work (Ovt. Work	Baseline Work Ac	t. Work	Rem. vvork			
.2.7.3	ID 11	Resource Name PhysicistF	Units 100%	Cost \$0.00	Baseline Cost \$0.00	Act. Cost \$0.00	Rem. Cost \$0.00	4 h	Ovt. Work 0 h	0 h	t. Work 0 h	Rem. Work 4 h			
.2.7.3	11 39	Resource Name PhysicistF SeniorMechEngF	Units 100% 400%	Cost \$0.00 \$759.20	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$759.20	4 h 16 h	0 h 0 h	0 h 0 h	0 h 0 h	4 h 16 h			
.2.7.3	11	Resource Name PhysicistF	Units 100%	Cost \$0.00	\$0.00	\$0.00	\$0.00	4 h	0 h	0 h	0 h	4 h			
.2.7.3	11 39 40 50 51	Resource Name PhysicistF SeniorMechEngF SeniorMechTechF GapS Cathedral	Units 100% 400% 200% 200% 400%	\$0.00 \$759.20 \$229.80 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$759.20 \$229.80 \$0.00 \$0.00	4 h 16 h 8 h 8 h 16 h	0 h 0 h 0 h 0 h 0 h	0 h 0 h 0 h 0 h 0 h	0 h 0 h 0 h 0 h 0 h	4 h 16 h 8 h 8 h 16 h			
.2.7.3	11 39 40 50 51 56	Resource Name PhysicistF SeniorMechEngF SeniorMechTechF GapS Cathedral Dave Butler	Units 100% 400% 200% 200% 400% 100%	\$0.00 \$759.20 \$229.80 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$759.20 \$229.80 \$0.00 \$0.00 \$0.00	4 h 16 h 8 h 8 h 16 h 4 h	0 h 0 h 0 h 0 h 0 h 0 h	0 h 0 h 0 h 0 h 0 h 0 h	0 h 0 h 0 h 0 h 0 h 0 h	4 h 16 h 8 h 8 h 16 h 4 h			
2.7.3	11 39 40 50 51	Resource Name PhysicistF SeniorMechEngF SeniorMechTechF GapS Cathedral	Units 100% 400% 200% 200% 400%	\$0.00 \$759.20 \$229.80 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$759.20 \$229.80 \$0.00 \$0.00	4 h 16 h 8 h 8 h 16 h	0 h 0 h 0 h 0 h 0 h	0 h 0 h 0 h 0 h 0 h	0 h 0 h 0 h 0 h 0 h	4 h 16 h 8 h 8 h 16 h			

WBS		Name							Start	Finis	sh	M&S EQ	M&S Labor	FNAL Labor	Total Cost	
	els on S	S CC and table 8	& Brunson	in S gap"	continued							· · · · · · · · · · · · · · · · · · ·	****	****		
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work	_			
	93 94	Mike Roman Dan Olis	100% 100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	4 h 4 h	0 h 0 h	0 h 0 h	0 h 0 h	4 h 4 h				
	95	Joe Howell	100%	\$0.00	\$0.00	\$0.00	\$0.00	4 h	0 h	0 h	0 h	4 h				
	Notes			_												
		efinition- sk installs levels on S	S face of CC	and table a	nd rails and Bruns	on in S gan										
			race or co,	, and lable a	nu ians and bruns	sun in 3 gap.										
	M&S BO	OE-														
	Labor E	OF														
		soe- experience in gaps o	during Fall 20	004 shutdow	n.											
			-													
					5 "									0000.00		
1.5.2.7.4		Install levels or				•			/7/06	Fri 4/7/0		\$0.00	\$0.00	\$989.00	\$989.00	
	ID 11	Resource Name PhysicistF	Units 100%	Cost \$0.00	Baseline Cost \$0.00	Act. Cost	Rem. Cost \$0.00	Work 4 h	Ovt. Work	Baseline Work 0 h	Act. Work	Rem. Work 4 h	-			
	39	SeniorMechEngF	400%	\$759.20	\$0.00	\$0.00 \$0.00	\$759.20	16 h	0 h	0 h	0 h	16 h				
	40 49	SeniorMechTechF GapN	200% 200%	\$229.80 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$229.80 \$0.00	8 h 8 h	0 h 0 h	0 h 0 h	0 h 0 h	8 h 8 h				
	51 56	Cathedral	400%	\$0.00	\$0.00	\$0.00	\$0.00	16 h	0 h	0 h	0 h	16 h				
	56	Dave Butler	100%	\$0.00	\$0.00	\$0.00	\$0.00	4 h	0 h	0 h	0 h	4 h				
	58 74	Bill Cooper Youri Orlov	100% 100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	4 h 4 h	0 h 0 h	0 h 0 h	0 h 0 h	4 h 4 h				
	93	Mike Roman	100%	\$0.00	\$0.00	\$0.00	\$0.00	4 h	0 h	0 h	0 h	4 h				
	94	Dan Olis	100%	\$0.00	\$0.00	\$0.00	\$0.00	4 h	0 h	0 h	0 h	4 h				
	95	Joe Howell	100%	\$0.00	\$0.00	\$0.00	\$0.00	4 h	0 h	0 h	0 h	4 h				
	Notes	P 10		-												
	This tas	efinition- sk installs levels on N	J CC face a	nd table and	rails in N gan											
			100 1000, 0	na table and	rans iir i gap.											
	M&S B	OE-														
	NA															
	Labor E	BOE-														
	Runlla	experience in gaps of	during Fall 20	004 shutdow	n.											
1.5.2.7.5		Mount Stages							/7/06	Fri 4/7/0		\$0.00	\$0.00	\$989.00	\$989.00	
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work	_			
	11 39	PhysicistF SeniorMechEngF	100% 400%	\$0.00 \$759.20	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$759.20	4 h 16 h	0 h 0 h	0 h 0 h	0 h 0 h	4 h 16 h				
	40	SeniorMechTechF	200%	\$229.80	\$0.00	\$0.00	\$229.80	8 h	0 h	0 h	0 h	8 h				
	49	GapN	200%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h				
	50 51	GapS Cathedral	200% 400%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	8 h 16 h	0 h	0 h 0 h	0 h 0 h	8 h 16 h				
	51 56	Dave Butler	100%	\$0.00	\$0.00	\$0.00	\$0.00	4 h	0 h 0 h	0 h	0 h	16 fi 4 h				
	56 58	Bill Cooper	100%	\$0.00	\$0.00	\$0.00	\$0.00	4 h	0 h	0 h	0 h	4 h				
	74	Youri Orlov	100%	\$0.00	\$0.00	\$0.00	\$0.00	4 h	0 h	0 h	0 h	4 h				
	93 94	Mike Roman Dan Olis	100% 100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	4 h	0 h 0 h	0 h 0 h	0 h 0 h	4 h 4 h				
	94 95	Joe Howell	100%	\$0.00	\$0.00	\$0.00	\$0.00	4 h 4 h	0 h	0 h	0 h	4 n 4 h				
	Notes															
	WBS D	efinition-		-												
		sk aligns table and s	hort rails in N	l gap relative	e to SMT membra	ne opening u	sing Brunson in	S gap.								
	M&S B	OE-														
	NA															
	Labor E	OF.														
		soe- experience in gaps o	during Fall 20	004 shutdow	n.											
		pononco in gapa (g i all 20													
1.5.2.7.6		Move Brunson	from S co	n to N ac	n inetall table	& raile in 9	ns	Mon 4/	10/06	Mon 4/10/0	16	\$0.00	\$0.00	\$989.00	\$989.00	
1.5.2.7.0	10						•						φ0.00	φ909.00	φ303.00	
	ID 11	Resource Name PhysicistF	Units 100%	Cost \$0.00	Baseline Cost \$0.00	Act. Cost \$0.00	Rem. Cost \$0.00	Work 4 h	Ovt. Work 0 h	Baseline Work	Act. Work 0 h	Rem. Work 4 h	-			
	39	SeniorMechEngF	400%	\$0.00 \$759.20	\$0.00	\$0.00	\$0.00 \$759.20	4 n 16 h	0 h	0 h	0 h	4 n 16 h				
	40	SeniorMechTechF	200%	\$229.80	\$0.00	\$0.00	\$229.80	8 h	0 h	0 h	0 h	8 h				
	49 50	GapN CC	200% 200%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	8 h 8 h	0 h	0 h	0 h 0 h	8 h				
	50 51	GapS Cathedral	200% 400%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	8 h 16 h	0 h 0 h	0 h 0 h	0 h 0 h	8 h 16 h				
	56	Dave Butler	100%	\$0.00	\$0.00	\$0.00	\$0.00	4 h	0 h	0 h	0 h	4 h				
	58	Bill Cooper	100%	\$0.00	\$0.00	\$0.00	\$0.00	4 h	0 h	0 h	0 h	4 h				
	74 93	Youri Orlov Mike Roman	100% 100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	4 h 4 h	0 h 0 h	0 h 0 h	0 h 0 h	4 h 4 h				
	93 94	міке котап Dan Olis	100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00	\$0.00 \$0.00	4 n 4 h	0 n 0 h	0 n 0 h	0 n 0 h	4 n 4 h				

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M&S EQ M&S Labor WBS Name Start Finish FNAL Labor **Total Cost** to N gap, install table & rails in S gap" continued Resource Name Cost Baseline Cost Act. Cost Units Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work \$0.00 \$0.00 \$0.00 4 h WBS Definition-This task moves the Brunson from the S gap to the N gap (or more likely, installs a second Brunson in the N gap, leaving the first Brunson in the S gap), installs tables & rails in S gap. Labor BOE-Runlla experience in gaps during Fall 2004 shutdown. 1.5.2.7.7 \$0.00 \$0.00 \$1,978.00 Mount Stages & Align S short Rails Mon 4/10/06 Tue 4/11/06 \$1,978.00 Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work \$0.00 100% \$0.00 11 Physicist \$0.00 39 SeniorMechEngF 400% \$1,518.40 \$0.00 \$0.00 \$1,518.40 32 h 0 h 0 h 0 h 32 h 40 49 50 51 56 SeniorMechTechF 200% \$459.60 \$0.00 \$0.00 \$459.60 16 h 0 h 0 h 0 h 16 h GapN 200% \$0.00 \$0.00 \$0.00 \$0.00 16 h 0 h 0 h 0 h 16 h GapS 200% \$0.00 \$0.00 \$0.00 \$0.00 16 h 0 h 0 h 0 h 16 h 32 h 8 h 0 h 0 h Cathedral 400% \$0.00 \$0.00 \$0.00 \$0.00 0 h 0 h 32 h \$0.00 \$0.00 \$0.00 \$0.00 Dave Butler 100% 0 h 0 h 8 h 58 Bill Cooper 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 0 h 8 h 74 Youri Orlov 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 93 Mike Roman 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 0 h 94 Dan Olis 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 0 h 8 h 95 \$0.00 Joe Howell 100% \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 0 h 8 h Notes This task aligns table and short rails in S gap relative to SMT membrane opening using Brunson in N gap. M&S BOE-NA Labor BOE-Runlla experience in gaps during Fall 2004 shutdown. 1.5.2.7.8 **L0 Installation Tooling Installed** Tue 4/11/06 Tue 4/11/06 \$0.00 \$0.00 \$0.00 \$0.00 WBS Definition-Milestone-L0 installation mounts installed in gaps. 1.5.2.8 \$12,966.80 L0 Installation Tooling & L0 Mounts Tue 4/11/06 Tue 4/18/06 \$0.00 \$0.00 \$12,966.80 ID 39 Resource Name Cost Baseline Cost Act. Cost Ovt. Work Baseline Work Rem. Work SeniorMechEngF 100% \$2,087.80 \$0.00 \$0.00 \$2,087.80 44 h 59 Russ Rucinski 100% \$0.00 \$0.00 \$0.00 44 h 0 h 0 h 44 h Notes This summary task aligns and tests L0 installation mounts in gaps. 1.5.2.8.1 Install N & S L0 Mounts on SMT membrane Tue 4/11/06 Thu 4/13/06 \$0.00 \$0.00 \$3,956.00 \$3,956.00 Resource Name Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work Units Cost PhysicistF 100% \$0.00 \$0.00 \$0.00 \$0.00 11 16 h 39 SeniorMechEngF \$3,036.80 64 h 64 h 400% \$0.00 \$0.00 \$3,036.80 0 h 0 h 0 h SeniorMechTechF 200% \$919.20 \$0.00 \$0.00 \$919.20 32 h 0 h 0 h 0 h 32 h 40 49 50 51 56 GapN 200% \$0.00 \$0.00 \$0.00 \$0.00 32 h 0 h 0 h 0 h 0 h 0 h 32 h GapS Cathedral \$0.00 \$0.00 \$0.00 \$0.00 32 h 64 h 32 h 64 h 200% \$0.00 \$0.00 0 h 0h\$0.00 \$0.00 400% 0 h 0 h Dave Butler 100% \$0.00 \$0.00 \$0.00 \$0.00 16 h 0 h 0 h 0 h 16 h 58 74 93 Bill Cooper 100% \$0.00 \$0.00 \$0.00 \$0.00 16 h 0 h 0 h 0 h Youri Orlov 100% \$0.00 \$0.00 \$0.00 \$0.00 16 h 0 h 0 h 0 h 16 h 100% 0 h Mike Roman \$0.00 \$0.00 \$0.00 \$0.00 16 h 0h0h16 h 94 95 100% 0 h Dan Olis \$0.00 \$0.00 \$0.00 \$0.00 16 h 0 h 0 h 16 h Joe Howell 100% \$0.00 \$0.00 Notes This task attaches mounting tool onto S stage clamps, then installs and glue L0 mounts to existing SMT membrane. Dual tooling and Brunsons might allow same in N gap at same time. Allow overnight cure before proceeding.

M&S BOE-

NA

WBS Name Start Finish M&S EQ M&S Labor FNAL Labor Total Cost

netall N.& S. L.O. Mounts on SMT membrane" continued

Labor BOE-

Runlla experience in gaps during Fall 2004 shutdown.

1.5.2.8.2 Prepare long rails in S gap Thu 4/13/06 Fri 4/14/06 \$0.00 \$0.00 \$1,978.00 \$1,978.00 Resource Name Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work \$0.00 PhysicistF 100% \$0.00 \$0.00 \$0.00 SeniorMechEngF 39 \$1.518.40 \$1.518.40 400% \$0.00 \$0.00 32 h 0 h 0 h 0 h 32 h \$459.60 \$0.00 16 h 8 h 40 49 200% 100% \$459.60 \$0.00 0 h 0 h SeniorMechTechF \$0.00 0 h 0h16 h \$0.00 \$0.00 0 h GapN 0 h 8 h 50 51 56 200% \$0.00 \$0.00 \$0.00 \$0.00 16 h 0 h 0 h GapS 0 h 16 h Cathedrai 400% \$0.00 \$0.00 \$0.00 \$0.00 32 h 0 h 0 h 0 h 32 h Dave Butler 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 0 h 8 h 58 74 93 Bill Cooper 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 0h0 h 8 h 100% \$0.00 \$0.00 0 h Youri Orlov \$0.00 \$0.00 8 h 0 h 0 h 8 h Mike Roman 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 0 h 8 h Dan Olis 100% \$0.00 \$0.00 \$0.00 \$0.00 8 h 0 h 0 h 0 h 8 h Joe Howell 100%

Notes

This task removes mount tool and short rails from S gap, installs long rail on S table, mounts stages and aligns long rail to SMT membrane opening axis using Brunson in N gap.

M&S BOE-

NA

Labor BOE-

Runlla experience in gaps during Fall 2004 shutdown.

1.5.2.8.3 Install Long L0 Installation Tool on S rails & Check Deflections Fri 4/14/06 Mon 4/17/06 \$0.00 \$0.00 \$2.967.00 \$2.967.00 Resource Name Units Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work Cost 100% \$0.00 \$0.00 11 Physicist \$0.00 12 h 12 h 39 400% \$2,277.60 \$0.00 \$0.00 \$2,277.60 48 h 0 h 48 h SeniorMechEngF 0 h 0 h 40 49 SeniorMechTechF 200% \$689.40 \$0.00 \$0.00 \$689.40 24 h 0 h 0 h 0 h 24 h GapN 200% \$0.00 \$0.00 \$0.00 \$0.00 24 h 0 h 0 h 0 h 24 h 50 51 56 GapS 200% \$0.00 \$0.00 \$0.00 \$0.00 24 h 0 h 0 h 0 h 24 h \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 48 h 12 h 0 h 0 h Cathedrai 400% \$0.00 0 h 0h48 h 100% \$0.00 0 h 12 h Dave Butler 0 h 58 Bill Cooper 100% \$0.00 \$0.00 \$0.00 \$0.00 12 h 0 h 0 h 0 h 12 h Youri Orlov 100% \$0.00 \$0.00 \$0.00 \$0.00 12 h 0 h 0 h 0 h 12 h 93 Mike Roman 100% \$0.00 \$0.00 \$0.00 \$0.00 12 h 0 h 0 h 0 h 12 h 94 Dan Olis 100% \$0.00 \$0.00 \$0.00 \$0.00 12 h 0 h 0 h 0 h 12 h Joe Howell 100% \$0.00 \$0.00 \$0.00 \$0.00 12 h 0h0 h 0 h 12 h

Notes WBS Definition-

This task brings first half of L0 long installation tool into S gap, removes purge stopper from ES pipe, inserts tool into ECS pipe, brings in 2nd half of tool and joins it to first half; adjust stages to align tool to SMT membrane using Brunson in N gap, checks motion of tool into SMT with weight added which simulates L0.

M&S BOE-

NA

Labor BOE-

Runlla experience with beampipe mounts, plus consideration of

.5.2.8.4		Remove Bruns	on from N	Gap, prep	are stages in N	l gap		Tue 4/18	3/06	Tue 4/18/0	6	\$0.00	\$0.00	\$1,978.00	\$1,978.00
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work			
	11	PhysicistF	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h			
	39	SeniorMechEngF	400%	\$1,518.40	\$0.00	\$0.00	\$1,518.40	32 h	0 h	0 h	0 h	32 h			
	40	SeniorMechTechF	200%	\$459.60	\$0.00	\$0.00	\$459.60	16 h	0 h	0 h	0 h	16 h			
	50	GapS	200%	\$0.00	\$0.00	\$0.00	\$0.00	16 h	0 h	0 h	0 h	16 h			
	51	Cathedral	400%	\$0.00	\$0.00	\$0.00	\$0.00	32 h	0 h	0 h	0 h	32 h			
	56	Dave Butler	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h			
	58	Bill Cooper	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h			
	74	Youri Orlov	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h			
	93	Mike Roman	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h			
	94	Dan Olis	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h			
	95	Joe Howell	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h			

Notes

WBS Definition-

This task removes Brunson from N gap, installs back half of rail support, short rails on back half, aligns to front rails, installs stages and mounting clamps on N rails, positions one stage at N end of rails.

M&S BOE-

NA

Labor BOE-

		Name						S	art	Finish	М&\$	SEQ	M&S Labor	FNAL Labor	Total Cost
move I	Brunsor	n from N Gap, pr	epare stag	ges in N ga	ap" continued										
	Notes														
	Runlla	experience with bear	mpipe mount	s, plus consi	ideration of										
2.8.5		Tooling & Mou	ints read	v for LO In	sertion			Tue 4/18	/06	Tue 4/18/06	\$	0.00	\$0.00	\$0.00	\$0.00
	Notes	_	anto roda	, 101 20 111	iooraon			140 4, 10	•	140 4/10/00	•	0.00	ψοισσ	\$0.00	ψο.ου
		efinition- ne- L0 installed and o	connected to	readout sys	tem.										
.2.9		Insert L0 in SN	VIT & Insta	all Junctio	on Card Moun	ts	\	Ved 4/19	/ 06	Thu 4/20/06	\$	0.00	\$0.00	\$4,715.20	\$4,715.20
	ID 39	Resource Name SeniorMechEngF	Units 100%	Cost \$759.20	Baseline Cost \$0.00	Act. Cost \$0.00	Rem. Cost \$759.20	Work C	vt. Work 0 h	Baseline Work Act.	Work Ren	n. Work 16 h			
	59	Russ Rucinski	100%	\$0.00	\$0.00	\$0.00	\$0.00	16 h	0 h	0 h	0 h	16 h			
	Notes	efinition-													
		mmary task installs L	0 in the Run	IIa SMT and	stores new Be be	ampipe in EC	S.								
2.9.1		Draw L0 into R	unlla SMT				\	Ved 4/19	′06	Wed 4/19/06	\$	0.00	\$0.00	\$1,978.00	\$1,978.00
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work			Rem. Work			
	11 39	PhysicistF SeniorMechEngF	100% 400%	\$0.00 \$1,518.40	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$1,518.40	8 h 32 h	0 h 0 h	0 h 0 h	0 h 0 h	8 h 32 h			
	40	SeniorMechTechF	200%	\$459.60	\$0.00	\$0.00	\$459.60	16 h	0 h	0 h	0 h	16 h			
	49 50	GapN GapS	200% 200%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	16 h	0 h	0 h 0 h	0 h 0 h	16 h 16 h			
	50 51	GapS Cathedral	200% 400%	\$0.00	\$0.00	\$0.00 \$0.00	\$0.00 \$0.00	16 h 32 h	0 h	0 n 0 h	0 n 0 h	16 n 32 h			
	56	Dave Butler	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h			
	58	Bill Cooper	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h			
	74 93	Youri Orlov Mike Roman	100% 100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	8 h 8 h	0 h 0 h	0 h 0 h	0 h 0 h	8 h 8 h			
	94	Dan Olis	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h			
								8 h	0 h	0 h	0 h	8 h			
	95 Notes WBS D This tas the SM	T, supports long tool as short tool from N g	on S gap rai	Is and stage:	s, rotates L0 15 de	egrees when it	reaches corre	sing the N i	ails and clan	np system as L0 is wit	etween L0 and	d ring mount	npipe and using lor previously glued o	ng installation tool (which n membrane; installs ba	n ultimately reenters ECS pipe Il & cone mounts; repeats for l
	Motes WBS D This tas the SM remove M&S BO NA	Definition- sk draws L0 into posi T, supports long tool se short tool from N g OE-	tion while ma on S gap rai ap. Remove	anaging purg Is and stage: es all installat	ge in N EC (and ev s, rotates L0 15 de tion tooling from S	rentually S EC egrees when it gap and remo) beampipes, u reaches corre oves cable exte	sing the N i ot Z position nsion supp	ails and clan , and attach orts from L0,	np system as L0 is wit es S connection ring b	etween L0 and	d ring mount	npipe and using lor previously glued o	ng installation tool (which n membrane; installs ba	n ultimately reenters ECS pipe Il & cone mounts; repeats for I
.2.9.2	Motes WBS D This tas the SM remove M&S BO NA	refinition- sk draws L0 into posi T, supports long tool as short tool from N g OE-	tion while ma on S gap rai ap. Remove	anaging purg Is and stage: ss all installat	ge in N EC (and ev s, rotates L0 15 de tion tooling from S xperience with Rur	rentually S EC; ggrees when it gap and remo	beampipes, u reaches corre- eves cable exte	sing the N i ot Z position nsion supp	ails and clan , and attach orts from L0, estimate.	np system as L0 is wit es S connection ring b	etween L0 and n the beampip	d ring mount	npipe and using lor previously glued or \$0.00	ng installation tool (which in membrane; installs ba	n ultimately reenters ECS pipe I & cone mounts, repeats for I
5.2.9.2	Notes WBS D This tas the SM' remove M&S BO NA Labor B Detailed	perfinition- sk draws L0 into posi T, supports long tool ss short tool from N g OE- OCE- OCE- Install N & S JU Resource Name	tion while ma on S gap rai ap. Remove	anaging purg Is and stage Is all installat Dived, plus exercised rd Mounts Cost	ge in N EC (and even so, rotates L0 15 de tion tooling from S superience with Rure on SMT mem Baseline Cost	rentually S EC agrees when it gap and remo	beampipes, u reaches corre oves cable exte	sing the N inct Z position supposition supposition supposition for the basis of the basis of the Work	ails and clan, and attach orts from L0, estimate.	np system as L0 is with the S connection ring be taping them away from the taping them as a second to the taping the tap	etween L0 and n the beampip	d ring mount be bore. 0.00 Rem. Work	préviously glued o	n membrane; installs ba	II & cone mounts; repeats for I
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5.2.9.2	M&S BONA Labor B Detailed	refinition- sk draws L0 into posit T, supports long tool ss short tool from N g OE- OE- OC- Install N & S JU Resource Name PhysicistF SeniorMechEngF SeniorMechEngF SeniorMechTechF GapN GapS Cathedral Dave Buller	tion while ma on S gap rai ap. Remove	anaging purg ls and stage: sall installat solved, plus experience of the sall installat solved, plus experience of the sall installat solved, plus experience of the sall installat solved in the sall installation of the sa	pe in N EC (and evs., rotates L0 15 de tion tooling from S experience with Rur S on SMT mem Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	rentually S EC; grees when it gap and remo hilla silicon inst Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	lallation forms to solve the solve so	the basis of the b	estimate. Of Ovt. Work Oh Oh Oh Oh Oh Oh Oh Oh Oh	Thu 4/20/06 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	stween L0 and not the beampip	0.00 Rem. Work 8 h 16 h 16 h 16 h 8 h	préviously glued o	n membrane; installs ba	II & cone mounts; repeats for I
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.2.9.2	95 Notes WBS D This tas the SM' remove M&S BC NA Labor E Detailed 10 11 39 40 49 50 51 56 58 74 93 94 95	inefinition- sisk draws L0 into posit T, supports long tool sis short tool from N g OE- GOE- d consideration of op Install N & S JU Resource Name PhysicistF SeniorMechEngF SeniorMechTechF GapN GapS Cathedral Dalv Butler Bill Cooper Your Orlov Mike Roman	tion while ma on S gap rai ap. Remove	anaging purgis and stages is all installated stages all installated stages all installated stages and stages all installated stages all	pe in N EC (and every services of the services	brane Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Deampipes, u reaches correives cable exterior	sing the N I at Z position nsion supple to the basis of t	ails and clan, and attach orts from L0, estimate.	Thu 4/20/06 Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	streen L0 and not the beampip	0.00 Rem. Work 8 h 32 h 16 h 16 h 32 h 8 h 8 h 8 h 8 h 8 h	préviously glued o	n membrane; installs ba	II & cone mounts; repeats for I
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.2.9.2	M&S BC Notes WBS D This tas the SM' remove M&S BC NA Labor E Detailer ID 11 39 40 49 50 51 56 58 74 93 94 95 Notes WBS D This tas M&S BC NA Labor E Labor E	refinition-sk draws L0 into posis T, supports long tool is short tool from N g OE- BOE- GOE- GOE- GOE- GOE- GOE- GOE- GOE- G	tion while may on S gap rai ap. Remove erations involved the control of the contr	anaging purg Is and stage Is and stage Is all installat olived, plus expensed in the Island I	ge in N EC (and every services of the services	brane Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost Rem. Cost \$0.00 \$1,518.40 \$459.60 \$0.00	sing the N at Z position nsion supple the basis of Thu 4/20 Work 8 h 32 h 16 h 16 h 32 h 8 h 8 h 8 h 8 h 8 h 8 h 8 h	estimate. O6 Ovt. Work Oh	Thu 4/20/06 Baseline Work 0h	steen L0 and not the beampip	0.00 Rem. Work 8 h 16 h 16 h 16 h 8 h 8 h 8 h 8 h 8 h	préviously glued o	n membrane; installs ba	II & cone mounts; repeats for I
5.2.9.2	M&S BC Notes WBS D This tas the SM' remove M&S BC NA Labor E Detailer ID 11 39 40 49 50 51 56 58 74 93 94 95 Notes WBS D This tas M&S BC NA Labor E Labor E	refinition-sk draws L0 into posit T, supports long tool is short tool from N g OE- OE- OE- OE- OE- Install N & S Ju. Resource Name PhysicistF SeniorMechTechF GapN GapS Cathedral Dave Buller Bill Cooper Your Orlov Mike Roman Dan Oils Joe Howell Definition-sk glues N junction ca	tion while may on S gap rai ap. Remove erations involved and the second of the second	anaging purg ls and stage: sall installat olived, plus expenses all installat olived, plus expenses and sall installat olived, plus expenses of solid sall installation of sall install	ge in N EC (and every service of the control of the	brane Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Deampipes, u reaches correves cable exterves cabl	sing the N at Z position nsion supple the basis of Thu 4/20 Work 8 h 32 h 16 h 16 h 32 h 8 h 8 h 8 h 8 h 8 h 8 h 8 h	estimate. O6 Ovt. Work Oh	Thu 4/20/06 Baseline Work 0h	steem L0 and not the beampip	0.00 Rem. Work 8 h 16 h 16 h 16 h 8 h 8 h 8 h 8 h 8 h	préviously glued o	n membrane; installs ba	II & cone mounts; repeats for I

VBS		Name						5	Start	Finis	sh I	M&S EQ	M&S Labor	FNAL Labor	Total Cost	
.5.2.10		Install Be Bear	mpipe, Ju	ınction Ca	rds, Connect	L0 & Test		Fri 4/21	1/06	Fri 5/12/0)6	\$0.00	\$0.00	\$19,191.80	\$19,191.80	
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work				
-	39	SeniorMechEngF	100%	\$5,883.80	\$0.00	\$0.00	\$5,883.80	124 h	0 h	0 h	0 h	124 h	_			
	59	Russ Rucinski	100%	\$0.00	\$0.00	\$0.00	\$0.00	124 h	0 h	0 h	0 h	124 h				
	Notes															
Ī		Definition-														
		mmary task installs th	he new Be b	eampipe.												
	00	.,														
.5.2.10.1		Install Be Bean						Fri 4/21	1/06	Fri 4/21/0	06	\$0.00	\$0.00	\$1,978.00	\$1,978.00	
	ID				Baseline Cost	Act. Cost	Rem. Cost	Fri 4/21	1/06 Ovt. Work	Fri 4/21/0	06 Act. Work	\$0.00 Rem. Work	\$0.00	\$1,978.00	\$1,978.00	
		Install Be Bean	npipe into Units 100%	LO	Baseline Cost \$0.00	\$0.00	Rem. Cost \$0.00					Rem. Work 8 h	\$0.00	\$1,978.00	\$1,978.00	
		Install Be Beam Resource Name PhysicistF SeniorMechEngF	npipe into Units 100% 400%	Cost \$0.00 \$1,518.40	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$1,518.40	Work 8 h 32 h	Ovt. Work 0 h 0 h	Baseline Work 0 h 0 h	Act. Work 0 h	Rem. Work 8 h 32 h	\$0.00	\$1,978.00	\$1,978.00	
		Install Be Beam Resource Name PhysicistF SeniorMechEngF SeniorMechTechF	mpipe into Units 100% 400% 200%	Cost \$0.00 \$1,518.40 \$459.60	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$1,518.40 \$459.60	Work 8 h 32 h 16 h	Ovt. Work 0 h 0 h 0 h	Baseline Work 0 h 0 h 0 h	Act. Work 0 h 0 h	Rem. Work 8 h 32 h 16 h	\$0.00	\$1,978.00	\$1,978.00	
	ID 11 39 40 49	Install Be Beam Resource Name PhysicistF SeniorMechTechF GapN	mpipe into Units 100% 400% 200% 200%	Cost \$0.00 \$1,518.40 \$459.60 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$1,518.40 \$459.60 \$0.00	Work 8 h 32 h 16 h 16 h	Ovt. Work 0 h 0 h 0 h 0 h 0 h	Baseline Work 0 h 0 h 0 h 0 h 0 h	Act. Work 0 h 0 h 0 h	Rem. Work 8 h 32 h 16 h 16 h	\$0.00	\$1,978.00	\$1,978.00	
	ID 11 39 40 49 50	Install Be Bean Resource Name PhysicistF SeniorMechEngF SeniorMechTechF GapN GapS	Units 100% 400% 200% 200% 200%	Cost \$0.00 \$1,518.40 \$459.60 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$1,518.40 \$459.60 \$0.00 \$0.00	Work 8 h 32 h 16 h 16 h	Ovt. Work 0 h 0 h 0 h 0 h 0 h 0 h	Baseline Work 0 h 0 h 0 h 0 h 0 h	Act. Work 0 h 0 h 0 h 0 h 0 h 0 h	Rem. Work 8 h 32 h 16 h 16 h	\$0.00	\$1,978.00	\$1,978.00	
	ID 11 39 40 49	Install Be Beam Resource Name PhysicistF SeniorMechTechF GapN	mpipe into Units 100% 400% 200% 200% 200% 400%	Cost \$0.00 \$1,518.40 \$459.60 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$1,518.40 \$459.60 \$0.00 \$0.00 \$0.00	Work 8 h 32 h 16 h 16 h	Ovt. Work 0 h 0 h 0 h 0 h 0 h	Baseline Work 0 h 0 h 0 h 0 h 0 h	Act. Work 0 h 0 h 0 h	Rem. Work 8 h 32 h 16 h 16 h	\$0.00	\$1,978.00	\$1,978.00	
	ID 11 39 40 49 50	Install Be Bean Resource Name PhysicistF SeniorMechEngF SeniorMechTechF GapN GapS	npipe into Units 100% 400% 200% 200% 200% 400% 100%	Cost \$0.00 \$1,518.40 \$459.60 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$1,518.40 \$459.60 \$0.00 \$0.00 \$0.00 \$0.00	Work 8 h 32 h 16 h 16 h	Ovt. Work 0 h 0 h 0 h 0 h 0 h 0 h	Baseline Work 0 h 0 h 0 h 0 h 0 h	Act. Work 0 h 0 h 0 h 0 h 0 h 0 h	Rem. Work 8 h 32 h 16 h 16 h 32 h 8 h	\$0.00	\$1,978.00	\$1,978.00	
	ID 11 39 40 49 50 51	Install Be Beam Resource Name PhysicistF SeniorMechEngF SeniorMechTechF GapN GapS Cathedral	mpipe into Units 100% 400% 200% 200% 200% 400%	Cost \$0.00 \$1,518.40 \$459.60 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$1,518.40 \$459.60 \$0.00 \$0.00 \$0.00	8 h 32 h 16 h 16 h 16 h 32 h	Ovt. Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Baseline Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Act. Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Rem. Work 8 h 32 h 16 h 16 h 32 h 8 h	\$0.00	\$1,978.00	\$1,978.00	

0 h

94 95 Notes

93

WBS Definition-

Mike Roman

Dan Olis

Joe Howell

This task draws the RunlIb Be pipe into position while managing purge in N EC, using the N rails and V-blocks, unpackaging Be pipe as it moves S towards L0, eventually attaching short tool on N end to aid its progress southward. Removes N stages, checks for electrical isolation from L0, removes all installation tooling from N gap, and levels from faces of CC.

0 h

0 h

0 h

0 h

0 h

8 h

8 h

8 h

M&S BOE-

NA

Labor BOE-

Detailed consideration of operations involved, plus experience with Runlla silicon installation forms the basis of estimate.

\$0.00

\$0.00

\$0.00

\$0.00

\$0.00

\$0.00

\$0.00

\$0.00

\$0.00

8 h

8 h

8 h

).2	Connect and le	ak test L0	cooling ma	anifold		ľ	/lon 4/24	1/06	Tue 4/25/0	6	\$0.00	\$0.00	\$2,967.00	\$2,967.00
ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work			
11	PhysicistF	100%	\$0.00	\$0.00	\$0.00	\$0.00	12 h	0 h	0 h	0 h	12 h			
39	SeniorMechEngF	400%	\$2,277.60	\$0.00	\$0.00	\$2,277.60	48 h	0 h	0 h	0 h	48 h			
40	SeniorMechTechF	200%	\$689.40	\$0.00	\$0.00	\$689.40	24 h	0 h	0 h	0 h	24 h			
49	GapN	200%	\$0.00	\$0.00	\$0.00	\$0.00	24 h	0 h	0 h	0 h	24 h			
50	GapS	200%	\$0.00	\$0.00	\$0.00	\$0.00	24 h	0 h	0 h	0 h	24 h			
51	Cathedral	400%	\$0.00	\$0.00	\$0.00	\$0.00	48 h	0 h	0 h	0 h	48 h			
56	Dave Butler	100%	\$0.00	\$0.00	\$0.00	\$0.00	12 h	0 h	0 h	0 h	12 h			
58	Bill Cooper	100%	\$0.00	\$0.00	\$0.00	\$0.00	12 h	0 h	0 h	0 h	12 h			
74	Youri Orlov	100%	\$0.00	\$0.00	\$0.00	\$0.00	12 h	0 h	0 h	0 h	12 h			
93	Mike Roman	100%	\$0.00	\$0.00	\$0.00	\$0.00	12 h	0 h	0 h	0 h	12 h			
94	Dan Olis	100%	\$0.00	\$0.00	\$0.00	\$0.00	12 h	0 h	0 h	0 h	12 h			
95	Joe Howell	100%	\$0.00	\$0.00	\$0.00	\$0.00	12 h	0 h	0 h	0 h	12 h			

Notes
WBS Definition-

This task connects L0 cooling manifold and leak tests all connections

100%

100%

100%

\$0.00

\$0.00

\$0.00

M&S BOE-

NA

Labor BOE-

Runlla experience forms the basis of estimate for effort.

1.5.2.10.3		Install Junction	Cards, Te	empMon Ca	ards, Connect	L0 Electric	al	Tue 4/25	5/06	Mon 5/1/0	6	\$0.00	\$0.00	\$2,798.40	\$2,798.40	
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work				
	11	PhysicistF	100%	\$0.00	\$0.00	\$0.00	\$0.00	32 h	0 h	0 h	0 h	32 h				
	38	SeniorElecTechF	100%	\$960.00	\$0.00	\$0.00	\$960.00	32 h	0 h	0 h	0 h	32 h				
	40	SeniorMechTechF	200%	\$1,838.40	\$0.00	\$0.00	\$1,838.40	64 h	0 h	0 h	0 h	64 h				
	50	GapS	200%	\$0.00	\$0.00	\$0.00	\$0.00	64 h	0 h	0 h	0 h	64 h				
	51	Cathedral	400%	\$0.00	\$0.00	\$0.00	\$0.00	128 h	0 h	0 h	0 h	128 h				
	55	Linda Bagby	100%	\$0.00	\$0.00	\$0.00	\$0.00	32 h	0 h	0 h	0 h	32 h				
	56	Dave Butler	100%	\$0.00	\$0.00	\$0.00	\$0.00	32 h	0 h	0 h	0 h	32 h				
	69	John Fogelsong	100%	\$0.00	\$0.00	\$0.00	\$0.00	32 h	0 h	0 h	0 h	32 h				
	99	Chris Tolian	100%	\$0.00	\$0.00	\$0.00	\$0.00	32 h	0 h	0 h	0 h	32 h				

WBS Definition-

This task installs the 12 2-channel junction cards per side. The twisted pair cables on the junction cards connect to the adapter cards on the horseshoes. Six inner junction cards are installed all the way to the adapter cards on the horseshoes, and tested (junction card + twisted pair cable + adapter card), before proceeding with the outer ring of 6 junction cards. The digital cables from L0 are connected to the junction cards as the work proceeds.

The 80-conductor cables and clock cables are reconnected to the adapter cards also. Connect rad mon and Temp mon cables.

M&S EQ WBS Name Start Finish M&S Labor FNAL Labor **Total Cost** TempMon Cards, Connect L0 Electrically" continued Notes M&S BOE-Labor BOE-Runlla experience forms the basis of estimate for effort. There are 12 2-channel junction cards per side, and four can be installed per day per person. Dave Butler and Denny Graham are the preferred persons, with Linda Bagby; testing is done by Fermilab physicists -- Lipton, Numerotski. 6 temperature monitor cards on each horseshoe take an hour to install. 1.5.2.10.4 Begin technical commissioning of L0 Silicon - FNAL Mon 5/1/06 Fri 5/12/06 \$0.00 \$0.00 \$0.00 \$0.00 Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work 200% \$0.00 \$0.00 \$0.00 \$0.00 144 h WBS Definition-Begin electronic checkout of L0 silicon. Work continues until H-disks are fully installed and detector is closed. M&S BOE-NA Labor BOE-Run2a experience forms the basis of the estimates for labor. 1.5.2.10.5 Begin technical commissioning of L0 Silicon - Univ Mon 5/1/06 Fri 5/12/06 \$0.00 \$0.00 \$0.00 \$0.00 Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work 200% \$0.00 \$0.00 \$0.00 \$0.00 144 h 0 h Notes WBS Definition-Begin electronic checkout of L0 silicon. Work continues until H-disks are fully installed and detector is closed. M&S BOE-NA Run2a experience forms the basis of the estimates for labor. 1.5.2.10.6 Weld EC Beampipe stubs Mon 5/1/06 Tue 5/2/06 \$0.00 \$0.00 \$689.40 \$689.40 Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work 11 Physicisti 100% \$0.00 \$0.00 \$0.00 \$0.00 0 h 0 h SeniorMechTechF 200% \$459.60 \$0.00 \$0.00 16 h 0 h 16 h 42 49 WelderF 100% \$229.80 \$0.00 \$0.00 \$229.80 8 h 0 h 0 h 0 h 8 h GanN 200% \$0.00 \$0.00 \$0.00 \$0.00 16 h 0 h 0 h 0 h 16 h 50 51 GanS 200% \$0.00 \$0.00 \$0.00 \$0.00 16 h 0 h 0 h 0 h 16 h Cathedral 300% \$0.00 \$0.00 \$0.00 \$0.00 24 h 0 h 0 h 0 h 24 h Dave Butler \$0.00 \$0.00 \$0.00 \$0.00 0 h This task welds S EC beampipe stub; repeats for N side; installs vacuum pump and HMS leak detector in S gap; M&S BOE-NA Labor BOE-Runlla experience forms the basis of estimate 1.5.2.10.7 Tue 5/2/06 Thu 5/4/06 \$0.00 \$0.00 \$4.875.20 \$4.875.20 Connect Spools to Be pipe, leakcheck, disconnect & retract EC Resource Name Baseline Cost Baseline Work Act. Work Rem. Work Cost Act. Cost Rem. Cost Work Ovt. Work Units 39 400% \$3,036,80 \$3,036,80 SeniorMechEngl \$0.00 64 h \$0.00 64 h 0 h0 h 0 h 40 SeniorMechTechF 400% \$1,838.40 \$0.00 \$0.00 \$1,838.40 64 h 0 h 0 h 0 h 64 h 49 200% \$0.00 \$0.00 \$0.00 \$0.00 32 h 32 h GapN 0 h 0 h 0 h 50 GapS 200% \$0.00 \$0.00 \$0.00 \$0.00 32 h 0 h 0 h 0 h 32 h 51 Cathedral 400% \$0.00 \$0.00 \$0.00 \$0.00 64 h 0 h 0 h 0 h 64 h 56 Dave Butler 100% \$0.00 \$0.00 \$0.00 \$0.00 16 h 0 h 0 h 0 h 16 h Notes WBS Definition-This task connects the tee to S EC beampipe flange, connects extension spool to other end of tee, pulls pipe northward to connect to Be pipe flange; Pulls N EC beampipe inward (spacer locks at its extended position), makes connection to Be pipe, closes all valves on EC purge lines at C trusses, pulls vacuum on pipe and leakchecks stub welds, Be flange connections; disconnects N EC pipe joint at extension piece, unlock NEC pipe and move N; disconnect S EC pipe joint at tee, remove tee and leak-checking M&S BOE-Labor BOE-Runlla experience forms the basis of estimate.

VBS		Name						St	tart	Finish	N	1&S EQ	M&S Labor	FNAL Labor	Total Cost	
5.2.10.8		Runlib Be Bea	ampipe In	stalled, L0	Cabled			Thu 5/4/	/06	Thu 5/4/06		\$0.00	\$0.00	\$0.00	\$0.00	
	Notes															
		Definition- one- new Be beampip	e installed in	L0 and junct	ion cards installed	and connect	ted to adapter of	ards on hor	seshoes							
		mo non bo boampip	o motanoa m	20 0110 101101	ion darao motano		iou to adaptor o	a. ao o	000110001							
5.2.11		Install Inner H	l-dieke					Thu 5/4/	/06	Wed 5/10/06		\$0.00	\$0.00	\$9,430.40	\$9,430.40	
J.Z. 1 1	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost		Ovt. Work		Act. Work	Rem. Work	ψ0.00	ψ3,430.40	ψ3,430.40	
	39	SeniorMechEngF	100%	\$1,518.40	\$0.00	\$0.00	\$1,518.40	32 h	0 h	0 h	0 h	32 h	-			
	59	Russ Rucinski	100%	\$0.00	\$0.00	\$0.00	\$0.00	32 h	0 h	0 h	0 h	32 h				
	Notes															
		Definition- Immary task installs t	he inner H-d	isks.												
		•														
5.2.11.1		Install and Cab	le H-disks	, Connect	Cooling Lines	Install Bea	arr	Thu 5/4/	/06	Wed 5/10/06		\$0.00	\$0.00	\$7,912.00	\$7,912.00	
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work		Act. Work	Rem. Work	*****	* //-	7 75 23	
	11	PhysicistF	100%	\$0.00	\$0.00	\$0.00	\$0.00	32 h	0 h	0 h	0 h	32 h	_			
	39 40	SeniorMechEngF SeniorMechTechF	400% 200%	\$6,073.60 \$1,838.40	\$0.00 \$0.00	\$0.00 \$0.00	\$6,073.60 \$1,838.40	128 h 64 h	0 h 0 h	0 h 0 h	0 h 0 h	128 h 64 h				
	49	GapN	200%	\$0.00	\$0.00	\$0.00	\$0.00	64 h	0 h	0 h	0 h	64 h				
	50 51	GapS Cathedral	200% 400%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	64 h 128 h	0 h 0 h	0 h 0 h	0 h 0 h	64 h 128 h				
	56	Dave Butler	100%	\$0.00	\$0.00	\$0.00	\$0.00	32 h	0 h	0 h	0 h	32 h				
	58 74	Bill Cooper	100%	\$0.00	\$0.00	\$0.00	\$0.00	32 h 32 h	0 h	0 h	0 h	32 h				
	74 93	Youri Orlov Mike Roman	100% 100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	32 h 32 h	0 h 0 h	0 h 0 h	0 h 0 h	32 h 32 h				
	94	Dan Olis	100%	\$0.00	\$0.00	\$0.00	\$0.00	32 h	0 h	0 h	0 h	32 h				
	95	Joe Howell	100%	\$0.00	\$0.00	\$0.00	\$0.00	32 h	0 h	0 h	0 h	32 h				
	Notes	Definition-														
			inatallation f													
	disk mo	ounts, adjusting as ne						ough central	l holes in disk	s), connects cooling	lines and th	ne low mass cal	oles (48 per side).	_eak-checks cooling line	s, installs beampipe support	disks at
	M&S B NA Labor E	ounts, adjusting as ne	eeded to alig	n with EC pip	es; Starts dry air			ough central	l holes in disk	s), connects cooling	lines and th	ne low mass cal	oles (48 per side).	_eak-checks cooling line	s, instalis beampipe support	disks at
5.2.11.2	M&S B NA Labor E	ounts, adjusting as no OE- BOE-	eeded to alig	n with EC pip	es; Starts dry air		all connections.	Ned 5/10/		wed 5/10/06	lines and tr	so.oo	\$0.00	_eak-checks cooling line	s, installs beampipe support	disks at
5.2.11.2	M&S B NA Labor E Runlla	ounts, adjusting as no OE- BOE- experience installing H-disks Instal	eeded to alig	n with EC pip	es; Starts dry air		all connections.				lines and the					disks at
5.2.11.2	M&S BONA Labor E Runlla Notes WBS D	ounts, adjusting as no OE- BOE- experience installing H-disks Instal	eeded to alig	n with EC pip	es; Starts dry air		all connections.				lines and the					disks at o
5.2.11.2	M&S BONA Labor E Runlla Notes WBS D	ounts, adjusting as no OE- BOE- experience installing H-disks Instal	eeded to alig	n with EC pip	es; Starts dry air		all connections.				lines and the					disks at
	M&S BONA Labor E Runlla Notes WBS D	ounts, adjusting as no OE- BOE- experience installing H-disks Instal	eeded to alig the H-disks led stalled.	n with EC pip	es; Starts dry air		all connections.		/06		lines and the					disks at
	M&S B NA Labor E Runlla <u>Notes</u> WBS D Milesto	ounts, adjusting as no OE- BOE- experience installing H-disks Instal Definition- one- Inner H-disks ins Make Up Inne Resource Name	the H-disks led stalled. r Beampil Units	n with EC pip forms the bas	es; Starts dry air sis of estimate. Silicon Baseline Cost	ourge; Tests a	all connections.	Ned 5/10/ Ned 5/10/ Work	/06 Ovt. Work	Wed 5/10/06 Mon 5/15/06 Baseline Work A	Act. Work	\$0.00 \$0.00 Rem. Work	\$0.00	\$0.00	\$0.00	disks at
	M&S B NA Labor E Runlla Notes WBS D Milesto	ounts, adjusting as no OE- SOE- experience installing H-disks Install Definition- one- Inner H-disks ins Make Up Inne Resource Name SeniorMechEngF	the H-disks led stalled.	n with EC pip forms the base Des, Cool : Cost \$1,138.80	es; Starts dry air sis of estimate. Silicon Baseline Cost \$0.00	Act. Cost	Rem. Cost \$1,138.80	Ned 5/10/	/06	Wed 5/10/06 Mon 5/15/06	Act. Work O h	\$0.00 \$0.00 Rem. Work 24 h	\$0.00	\$0.00	\$0.00	disks at
	M&S Brand Runlla Notes WBS D Milesto ID 39 59	ounts, adjusting as no OE- SOE-experience installing H-disks Installing H-disks Installing Pefinition- Inner H-disks ins Make Up Inne Resource Name SeniorMechEngF Russ Rucinski	the H-disks led stalled. r Beampil Units 100%	n with EC pip forms the bas	es; Starts dry air sis of estimate. Silicon Baseline Cost	ourge; Tests a	all connections.	Ned 5/10/ Ned 5/10/ Work 24 h	/06 /06 Ovt. Work	Wed 5/10/06 Mon 5/15/06 Baseline Work Oh	Act. Work	\$0.00 \$0.00 Rem. Work	\$0.00	\$0.00	\$0.00	disks at i
	M&S B NA Labor E Runlla Notes WBS D Milesto	ounts, adjusting as no OE- BOE- experience installing H-disks Instal Definition- one- Inner H-disks ins Make Up Inner Resource Name SenionMechEngF Russ Rucinski	the H-disks led trace H-disks l	forms the base	sis of estimate. Silicon Baseline Cost \$0.00 \$0.00	Act. Cost \$0.00 \$0.00	Rem. Cost \$1,138.80 \$0.00	Ned 5/10/ Ned 5/10/ Work 24 h	/06 /06 Ovt. Work	Wed 5/10/06 Mon 5/15/06 Baseline Work Oh	Act. Work O h	\$0.00 \$0.00 Rem. Work 24 h	\$0.00	\$0.00	\$0.00	disks at
	M&S B NA Labor E Runlla Notes WBS D Milesto	ounts, adjusting as no OCE- BOE- experience installing H-disks Instal Definition- one- Inner H-disks ins Make Up Inne Resource Name SeniorMechEngF Russ Rucinski	the H-disks led trace H-disks l	forms the base	sis of estimate. Silicon Baseline Cost \$0.00 \$0.00	Act. Cost \$0.00 \$0.00	Rem. Cost \$1,138.80 \$0.00	Ned 5/10/ Ned 5/10/ Work 24 h	/06 /06 Ovt. Work	Wed 5/10/06 Mon 5/15/06 Baseline Work Oh	Act. Work O h	\$0.00 \$0.00 Rem. Work 24 h	\$0.00	\$0.00	\$0.00	disks at
5.2.12	M&S B NA Labor E Runlla Notes WBS D Milesto	ounts, adjusting as no OE- SOE- experience installing H-disks Install Definition- one- Inner H-disks ins Make Up Inne Resource Name SeniorMechEngF Russ Rucinski Definition- ummary task opens the	the H-disks led r Beampil Units 100% 100%	forms the base Des, Cool S Cost \$1,138.80 \$0.00 makes up the	sis of estimate. Silicon Baseline Cost \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 pes, cools sili	Rem. Cost \$1,138.80 \$0.00 icon.	Ned 5/10/ Ned 5/10/ Work 24 h 24 h	/06 /06 Ovt. Work 0 h 0 h	Wed 5/10/06 Mon 5/15/06 Baseline Work A 0 h 0 h	Act. Work O h	\$0.00 \$0.00 Rem. Work 24 h	\$0.00 \$0.00	\$0.00 \$4,036.00	\$0.00 \$4,036.00	disks at
5.2.12	M&S B NA Labor E Runlla Notes WBS D Milesto ID 39 59 Notes WBS D This su	ounts, adjusting as no OE- BOE- experience installing H-disks Install Definition- one- Inner H-disks ins Make Up Inne Resource Name SeniorMechEngF Russ Rucinski Experiment of the Name o	the H-disks led r Beampil Units 100% 100% ne gaps and	forms the base Des, Cool S Cost \$1,138.80 \$0.00 makes up the	sis of estimate. Silicon Baseline Cost \$0.00 \$0.00 the inner beamp	Act. Cost \$0.00 \$0.00 pes, cools sili	Rem. Cost \$1,138.80 \$0.00 icon.	Ned 5/10/ Ned 5/10/ Work 24 h 24 h	706 Ovt. Work 0 h 0 h	Wed 5/10/06 Mon 5/15/06 Baseline Work A 0 h 0 h	kct. Work O h O h	\$0.00 \$0.00 Rem. Work 24 h 24 h	\$0.00	\$0.00	\$0.00	disks at
.5.2.12	M&S B NA Labor E Runlla Notes WBS D Milesto	ounts, adjusting as no OE- SOE- experience installing H-disks Instal Definition- one- Inner H-disks ins Make Up Inne Resource Name SenioMheEngF Russ Rucinski Definition- ummary task opens the Install beampip Resource Name	the H-disks led r Beampin Units 100% ne gaps and be support Units	forms the base pes, Cool : Cost \$1,138.80 \$0.00 makes up the Cost Cost	sis of estimate. Silicon Baseline Cost \$0.00 \$0.00 the inner beamp	Act. Cost \$0.00 \$0.00 pes, cools sili	Rem. Cost \$1,138.80 \$0.00 icon.	Ved 5/10/ Work 24 h 24 h Ned 5/10/ Work	/06 Ovt. Work 0 h 0 h	Wed 5/10/06 Mon 5/15/06 Baseline Work A 0 h 0 h Thu 5/11/06 Baseline Work	Act. Work Oh Oh Act. Work	\$0.00 \$0.00 Rem. Work 24 h 24 h	\$0.00 \$0.00	\$0.00 \$4,036.00	\$0.00 \$4,036.00	disks at
.5.2.12	M&S B NA Labor E Runlla Notes WBS D Milesto ID 39 59 Notes This su	ounts, adjusting as no OCE- BOE- experience installing H-disks Instal befinition- one- Inner H-disks ins Make Up Inne Resource Name SeniorMechEngF Russ Rucinski Install beampip Resource Name PhysicistF SeniorMechEngF	the H-disks led trailled. r Beampil Units 100% 100% 100% 100% 100% 100% 100%	n with EC pip forms the base Des, Cool : Cost \$1,138.80 \$0.00 makes up the Cost \$0.00 \$1,518.40	Silicon Baseline Cost So.00 C/Be pipe joint Baseline Cost So.00 So.00	Act. Cost \$0.00 \$0.00 pes, cools sili	Rem. Cost \$1,138.80 \$0.00 icon.	Ned 5/10/ Ned 5/10/ Work 24 h 24 h	706 Ovt. Work 0 h 0 h	Wed 5/10/06 Mon 5/15/06 Baseline Work A 0 h 0 h	Act. Work Oh Oh Act. Work Oh	\$0.00 \$0.00 Rem. Work 24 h 24 h	\$0.00 \$0.00	\$0.00 \$4,036.00	\$0.00 \$4,036.00	disks at
.5.2.12	M&S B NA Labor E Runlla Notes WBS D Milesto ID 39 Notes WBS D This su	ounts, adjusting as no OE- BOE- experience installing H-disks Instal Definition- one- Inner H-disks ins Make Up Inner Resource Name SenionMechEngF Russ Rucinski Install beampip Resource Name PhysicistF SenionMechTechF SenionMechTechF	the H-disks led trace r Beampin Units 100% 100% the gaps and be support Units 100% 400% 200%	Des, Cool : Cost \$1,138.80 \$0.00 makes up the Cost \$5,000 \$1,518.40 \$449,60	Silicon Baseline Cost \$0.00 \$0.00 the inner beamp C/Be pipe joint Baseline Cost \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 pes, cools sili S Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$1,138.80 \$0.00 sicon.	Ned 5/10/ Work 24 h 24 h Ned 5/10/ Work 8 h 32 h 16 h	/06 /06 Ovt. Work 0 h 0 h	Wed 5/10/06 Mon 5/15/06 Baseline Work A 0 h 0 h Thu 5/11/06 Baseline Work 0 h 0 h 0 h 0 h	Act. Work Oh Oh Act. Work Oh Oh	\$0.00 Rem. Work 24 h 24 h \$0.00 Rem. Work 8 h 32 h 16 h	\$0.00 \$0.00	\$0.00 \$4,036.00	\$0.00 \$4,036.00	disks at
.5.2.12	M&S B MA Labor F Runlla Notes WBS D Milesto ID 39 59 Notes WBS D This su	ounts, adjusting as no OE- BOE- experience installing H-disks Instal definition- one- Inner H-disks ins Make Up Inne Resource Name SeniorMechEngF Russ Rucinski Definition- ummary task opens the Install beampig Resource Name PhysicistF SeniorMechEngF SeniorMechEngF SeniorMechTechF GapN	the H-disks led r Beampil Units 100% 100% ne gaps and 0e support Units 100% 400% 200% 200%	n with EC pip forms the bas Des, Cool : Cost \$1,38.80 \$0.00 makes up the Cost \$0.00 \$1,518.40 \$459.60 \$0.00	Silicon Baseline Cost \$0.00 the inner beamp C/Be pipe joint Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$1,138.80 \$0.00 icon.	Ned 5/10/ Work 24 h Ned 5/10/ Work 8 h 32 h 16 h 16 h	/06 Ovt. Work Oh Oh Oh Oh Oh Oh Oh Oh	Wed 5/10/06 Mon 5/15/06 Baseline Work A 0 h 0 h Thu 5/11/06 Baseline Work Oh 0 h	Act. Work Oh Oh Act. Work Oh Oh Oh	\$0.00 \$0.00 Rem. Work 24 h \$0.00 Rem. Work 8 h 32 h 16 h 16 h	\$0.00 \$0.00	\$0.00 \$4,036.00	\$0.00 \$4,036.00	disks at
.5.2.11.2 .5.2.12	M&S B MA Labor F Runlla Notes WBS D Milesto ID 39 59 Notes WBS D This su	ounts, adjusting as no OE- BOE- experience installing H-disks Install Definition- one- Inner H-disks ins Make Up Inne Resource Name SeniorMechEngF Russ Rucinski Definition- mmany task opens the Install beampip Resource Name PhysicistF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechEngF CapN GapN CapS Cathedral	the H-disks led r Beampil Units 100% 100% 100% 100% 200% 200% 400% 400%	n with EC pip forms the bas Des, Cool 3 Cost \$1,138.80 \$0.00 makes up the Cost \$0.00 \$1,518.40 \$459.60 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	silicon Baseline Cost \$0.00 \$0.00 the inner beamp C/Be pipe joint Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$1,138.80 \$0.00 sicon.	Ned 5/10/ Work 24 h 24 h Ned 5/10/ Work 8 h 32 h 16 h 16 h 16 h 32 h	706 Ovt. Work 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Wed 5/10/06 Mon 5/15/06 Baseline Work A 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Act. Work Oh Oh Oh Oh Oh Oh Oh	\$0.00 Rem. Work 24 h 24 h \$0.00 Rem. Work 16 h 16 h 16 h 32 h	\$0.00 \$0.00	\$0.00 \$4,036.00	\$0.00 \$4,036.00	disks at
.5.2.12	M&S B MA Labor E Runlla Notes WBS D Milesto ID 39 59 Notes WBS D This su ID 11 39 40 49 49 50 51 56	ounts, adjusting as no OE- SOE- experience installing H-disks Instal Definition- Inner H-disks instal SeriorMechEngF Russ Rucinski Install beampig Resource Name PhysicistF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechTechF GapN GapN GapS Cathedral Dave Buller	the H-disks led r Beampin Units 100% 100% the gaps and the support Units 200% 400% 400% 100%	n with EC pip forms the bas cost \$1,138.80 \$0.00 makes up the cost \$0.00 \$1,518.40 \$459.60 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Silicon Baseline Cost So.00	Act. Cost \$0.00 \$0	Rem. Cost \$0.00 S1.518.40 \$459.60 \$0.00 \$0.00 \$3.000 \$0.000 \$0.000 \$0.000 \$0.000	Ved 5/10/ Work 24 h 24 h Ned 5/10/ Work 8 h 32 h 16 h 16 h 16 h 38 h 8 h	/06 Ovt. Work Oh Oh Oh Oh Oh Oh Oh Oh	Wed 5/10/06 Mon 5/15/06 Baseline Work A 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Act. Work Oh Oh Oh Oh Oh Oh Oh Oh Oh	\$0.00 Rem. Work 24 h 24 h \$0.00 Rem. Work 8 h 32 h 16 h 16 h 16 h 16 h 16 h 16 h 16 h	\$0.00 \$0.00	\$0.00 \$4,036.00	\$0.00 \$4,036.00	disks at
.5.2.12	M&S B MA Labor E Runlla Notes WBS D Milesto ID 39 59 Notes WBS D This su ID 11 11 39 40 49 49 49 50 51 56 58	ounts, adjusting as no OCE- BOE- experience installing H-disks Instal befinition- me-Inner H-disks ins Make Up Inne Resource Name SeniorMechEngF Russ Rucinski Install beampip Resource Name PhysicistF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechTechF GapN GapS Cathedral Dave Buller Bill Cooper Youri Orfov	the H-disks led tralled. r Beampin Units 100% 100% 100% 200% 200% 400% 100% 100% 100%	n with EC pip forms the base Cost \$1,138.80 \$0.00 makes up the \$459.60 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Silicon Baseline Cost \$0.00 \$0.00 the inner beamp C/Be pipe joint Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00	Rem. Cost \$1,138.80 \$0.00 \$1.518.40 \$459.60 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Ned 5/10/ Work 24 h 24 h Ned 5/10/ Work 8 h 32 h 16 h 16 h 16 h 32 h 8 h 8 h 8 h	/06 Ovt. Work Oh Oh Oh Oh Oh Oh Oh Oh Oh	Wed 5/10/06 Mon 5/15/06 Baseline Work A 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	Act. Work Oh Oh Act. Work Oh Oh Oh Oh Oh Oh Oh Oh Oh O	\$0.00 Rem. Work 24 h 24 h \$0.00 Rem. Work 8 h 32 h 16 h 16 h 16 h 18 h 8 h 8 h	\$0.00 \$0.00	\$0.00 \$4,036.00	\$0.00 \$4,036.00	disks at
.5.2.12	M&S B MA M&S B NA Labor F Runlla Notes WBS D Milesto ID 39 59 Notes ID 11 39 40 49 50 51 56 58 74 93	ounts, adjusting as no OE- BOE- experience installing H-disks Install Definition- one- Inner H-disks ins Make Up Inne SeniorMechEngF Russ Rucinski Definition- mary task opens the Install beampig Resource Name Physicist SeniorMechEngF SeniorMechTechF GapN GapS Cathedral Dave Buller Bill Cooper Youri Orlow Mike Roman	the H-disks led trace Beampil Units 100% 100% 100% to Support Units 200% 200% 400% 100% 100% 100% 100% 100% 100% 1	n with EC pip forms the bas Cost \$1,138.80 \$0.00 makes up the \$5, make EC \$0.00 \$1,518.40 \$459.60 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Silicon Baseline Cost \$0.00 \$0.00 the inner beamp C/Be pipe joint Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0	Rem. Cost \$1,138.80 \$0.00 sicon. \$0.00 \$1,518.40 \$459.60 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Ned 5/10/ Work 24 h 24 h Ned 5/10/ Work 32 h 16 h 16 h 16 h 18 h 8 h 8 h 8 h	/06 /06 Ovt. Work Oh Oh Oh Oh Oh Oh Oh Oh Oh O	Wed 5/10/06 Mon 5/15/06 Baseline Work A O h O h O h O h O h O h O h O h O h O h	Act. Work Oh Oh Act. Work Oh Oh Oh Oh Oh Oh Oh Oh	\$0.00 Rem. Work 24 h 24 h \$0.00 Rem. Work 32 h 16 h 16 h 16 h 32 h 8 h 8 h 8 h 8 h	\$0.00 \$0.00	\$0.00 \$4,036.00	\$0.00 \$4,036.00	disks at
.5.2.12	M&S B MA Labor E Runlla Notes WBS D Milesto ID 39 59 Notes WBS D This su ID 11 11 39 40 49 49 49 50 51 56 58	ounts, adjusting as no OCE- BOE- experience installing H-disks Instal befinition- me-Inner H-disks ins Make Up Inne Resource Name SeniorMechEngF Russ Rucinski Install beampip Resource Name PhysicistF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechTechF GapN GapS Cathedral Dave Buller Bill Cooper Youri Orfov	the H-disks led tralled. r Beampin Units 100% 100% 100% 200% 200% 400% 100% 100% 100%	n with EC pip forms the base Cost \$1,138.80 \$0.00 makes up the \$459.60 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Silicon Baseline Cost \$0.00 \$0.00 the inner beamp C/Be pipe joint Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00	Rem. Cost \$1,138.80 \$0.00 \$1.518.40 \$459.60 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Ned 5/10/ Work 24 h 24 h Ned 5/10/ Work 8 h 32 h 16 h 16 h 16 h 32 h 8 h 8 h 8 h	/06 Ovt. Work Oh Oh Oh Oh Oh Oh Oh Oh Oh	Wed 5/10/06 Mon 5/15/06 Baseline Work A 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0	Act. Work Oh Oh Act. Work Oh Oh Oh Oh Oh Oh Oh Oh Oh O	\$0.00 Rem. Work 24 h 24 h \$0.00 Rem. Work 8 h 32 h 16 h 16 h 16 h 18 h 8 h 8 h	\$0.00 \$0.00	\$0.00 \$4,036.00	\$0.00 \$4,036.00	disks at
.5.2.12	M&S B MA Labor F Runlla Notes WBS D Milesto ID 39 59 Notes WBS D 11 11 39 40 49 49 50 50 56 58 58 74 93 94 95	ounts, adjusting as no OCE- BOE- experience installing H-disks Instal Definition- Inner H-disks ins Make Up Inne Resource Name SeniorMechEngF Russ Rucinski Definition- Inmary task opens the Install beampip Resource Name PhysicistF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechTechF GapN GapS Cathedral Dave Butler Bill Cooper Fill Cooper Fill Cooper Fill Cooper Dan Oils Joe Howell	the H-disks led Tr Beampil Units 100% 100% De support Units 100% 200% 200% 200% 100% 100% 100% 100%	n with EC pip forms the bas Des, Cool : Cost \$1,138.80 \$0.00 \$1,518.40 \$4459.60 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Silicon Baseline Cost \$0.00 \$0.00 the inner beamp C/Be pipe joint Baseline Cost \$0.00	Act. Cost \$0.00	Rem. Cost \$1,138.80 \$0.00 sicon. Rem. Cost \$0.00 \$1,518.40 \$459.60 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Ned 5/10/ Work 24 h 24 h 24 h 8 h 8 h 8 h 8 h 8 h	706 Ovt. Work Oh	Wed 5/10/06 Mon 5/15/06 Baseline Work A 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Act. Work Oh Oh Act. Work Oh	\$0.00 Rem. Work 24 h 24 h \$0.00 Rem. Work 8 h 32 h 16 h 16 h 16 h 18 h 8 h 8 h 8 h 8 h 8 h	\$0.00 \$0.00	\$0.00 \$4,036.00	\$0.00 \$4,036.00	disks at
5.2.12	M&S B MA M&S B NA Labor E Runlla Notess WBS D Milesto 1D 39 59 Notes 1D 11 39 40 49 50 51 56 58 74 93 94 95 Notes	ounts, adjusting as no OCE- BOE- experience installing H-disks Instal Definition- Inner H-disks ins Make Up Inne Resource Name SeniorMechEngF Russ Rucinski Definition- Inmary task opens the Install beampip Resource Name PhysicistF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechEngF SeniorMechTechF GapN GapS Cathedral Dave Butler Bill Cooper Fill Cooper Fill Cooper Fill Cooper Dan Oils Joe Howell	the H-disks led Tr Beampil Units 100% 100% De support Units 100% 200% 200% 200% 100% 100% 100% 100%	n with EC pip forms the bas Des, Cool : Cost \$1,138.80 \$0.00 \$1,518.40 \$4459.60 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Silicon Baseline Cost \$0.00 \$0.00 the inner beamp C/Be pipe joint Baseline Cost \$0.00	Act. Cost \$0.00	Rem. Cost \$1,138.80 \$0.00 sicon. Rem. Cost \$0.00 \$1,518.40 \$459.60 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Ned 5/10/ Work 24 h 24 h 24 h 8 h 8 h 8 h 8 h 8 h	706 Ovt. Work Oh	Wed 5/10/06 Mon 5/15/06 Baseline Work A 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h 0 h	Act. Work Oh Oh Act. Work Oh	\$0.00 Rem. Work 24 h 24 h \$0.00 Rem. Work 8 h 32 h 16 h 16 h 16 h 18 h 8 h 8 h 8 h 8 h 8 h	\$0.00 \$0.00	\$0.00 \$4,036.00	\$0.00 \$4,036.00	disks :

WBS DefinitionThis task makes up connections between new flanges and extensions bellows, manages EC pipe purges and collapsible spacers as EC pipes are drawn inward to make the connections, adjusts bellows restraints, installs leak-check bags on joints with remote supply lines.

M&S BOE-NA

		Name							Start	Finis	h	M&S EQ	M&S Labor	FNAL Labor	Total Cost	
"Install bea		supports, make I	EC/Be pip	e joints" c	continued											
	Notes			•												
	Labor B 2004 sh	BOE- nudown experience fo	rms the bas	sis of estimat	te for effort.											
1.5.2.12.2		Install H-disk in	sulation &	Tedlar M	lembranes Ra	ad monitors	•	Thu 5/1	1/06	Fri 5/12/0	6	\$0.00	\$0.00	\$459.60	\$459.60	
1.0.2.12.2	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work	Ψ0.00	ψ100.00	Ψ100.00	
	11 40	PhysicistF SeniorMechTechF	100% 200%	\$0.00 \$459.60	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$459.60	8 h 16 h	0 h 0 h	0 h 0 h	0 h 0 h	8 h 16 h				
	49 50	GapN GapS	200% 200%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	16 h 16 h	0 h 0 h	0 h 0 h	0 h 0 h	16 h 16 h				
	51 56	Cathedral Dave Butler	400% 100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	32 h 8 h	0 h 0 h	0 h 0 h	0 h 0 h	32 h 8 h				
	58	Bill Cooper	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h				
	WBS D	efinition-														
	This tas	sk installs TLD rad mo	onitors, inne	r H-disk foar	m insulation and T	Tedlar cover o	ver tracker reg	ion.								
	M&S BO	OE-														
	Labor B Runlla	BOE- and 2004 shudown ex	xperience fo	orms the bas	is of estimate for	effort.										
.5.2.12.3		Cool Silicon						Fri 5/1		Mon 5/15/0		\$0.00	\$0.00	\$459.60	\$459.60	
	1D 11	Resource Name PhysicistF	Units 100%	Cost \$0.00	Baseline Cost \$0.00	Act. Cost \$0.00	Rem. Cost \$0.00	Work 8 h	Ovt. Work 0 h	Baseline Work 0 h	Act. Work 0 h	Rem. Work 8 h				
	40 49	SeniorMechTechF GapN	200% 200%	\$459.60 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$459.60 \$0.00	16 h 16 h	0 h 0 h	0 h 0 h	0 h 0 h	16 h 16 h				
	50 51	GapS Cathedral	200% 400%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	16 h 32 h	0 h 0 h	0 h 0 h	0 h 0 h	16 h 32 h				
	56 58	Dave Butler Bill Cooper	100% 100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	8 h 8 h	0 h 0 h	0 h 0 h	0 h 0 h	8 h 8 h				
	Notes	•			,	,	,									
		efinition- sk cools the silicon.														
	M&S BO	OE-														
	Labor B			orms the has	is of estimate for	effort.										
	Runlla	and 2004 Shudown e	xperience fo	iiiia iiie baa												
		Silicon Cold ar			nical Commi	ssioning		Mon 5/1	5/06	Mon 5/15/0	6	\$0.00	\$0.00	\$0.00	\$0.00	
.5.2.12.4	Notes WBS D	Silicon Cold ar	nd Ready	for Tech				Mon 5/1	5/06	Mon 5/15/0	6	\$0.00	\$0.00	\$0.00	\$0.00	
.5.2.12.4	Notes WBS D	Silicon Cold ar	nd Ready	for Tech				Mon 5/1	5/06	Mon 5/15/0	6	\$0.00	\$0.00	\$0.00	\$0.00	
.5.2.12.4	Notes WBS D	Silicon Cold ar	nd Ready	dy for techni	ical commissionin			Mon 5/1		Mon 5/15/0		\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$379.60	\$0.00 \$379.60	
.5.2.12.4	Notes WBS D Mileston	Silicon Cold and efinition-ne- Runllb silicon cool Technical com Resource Name	oled and readmissioni Units	dy for technical of the control of t	ical commissionin nIIb Silicon Baseline Cost	g. Act. Cost	Rem. Cost	Mon 5/1	5/06 Ovt. Work	Tue 5/16/0	6 Act. Work	\$0.00 Rem. Work			·	
.5.2.12.4	Notes WBS D Mileston	Silicon Cold an efinition- ne- Runllb silicon coo Technical com	nd Ready	dy for techning of Rur	ical commissionin	g.	Rem. Cost \$379.60 \$0.00	Mon 5/1	5/06	Tue 5/16/0	6	\$0.00			·	
.5.2.12.4	Notes WBS D Milestor	Silicon Cold at efinition- ne- Runllb silicon coo Technical com Resource Name SeniorMechEngF Russ Rucinski	oled and readumissioni Units 100%	dy for techni ng of Rui Cost \$379.60	nllb Silicon Baseline Cost \$0.00	g. **Act. Cost \$0.00	\$379.60	Mon 5/1 Work 8 h	5/06 Ovt. Work 0 h	Tue 5/16/0 Baseline Work	6 Act. Work 0 h	\$0.00 Rem. Work			·	
5.2.12.4	Notes WBS D Mileston ID 39 59 Notes WBS D	efinition- ne- Runllb silicon coo Technical com Resource Name Senior/MechEngF	oled and read missioni Units 100% 100%	dy for techning of Run Cost \$379.60 \$0.00	ical commissionin nillb Silicon Baseline Cost \$0.00 \$0.00	Act. Cost \$0.00 \$0.00	\$379.60 \$0.00	Mon 5/1 Work 8 h	5/06 Ovt. Work 0 h	Tue 5/16/0 Baseline Work	6 Act. Work 0 h	\$0.00 Rem. Work			·	
.5.2.12.4	Notes WBS D Mileston ID 39 59 Notes WBS D	efinition- ne- Runllb silicon coc Technical com Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task operates	nd Ready pled and read missioni Units 100% 100% silicon from	dy for technical dy for the dy for technical dy for the dy f	nilb Silicon Baseline Cost \$0.00 \$0.00	g. **Act. Cost	\$379.60 \$0.00	Mon 5/1 Work 8 h 8 h	5/06 Ovt. Work 0 h 0 h	Tue 5/16/0 Baseline Work 0 h 0 h	6 Act. Work O h O h	\$0.00 Rem. Work 8 h 8 h	\$0.00	\$379.60	\$379.60	
5.2.12.4 5.2.13	Notes WBS D Mileston ID 39 59 Notes WBS D	efinition- ne- Runllb silicon coc Technical com Resource Name SeniorMechEngF Russ Rucinski efinition-	nd Ready pled and ready missioni Units 100% 100% silicon from	dy for technical dy for the dy for technical dy for the dy	nilb Silicon Baseline Cost \$0.00 \$0.00 m, demonstrates i	g. Act. Cost \$0.00 \$0.00 ts full operabi	\$379.60 \$0.00	Mon 5/1 Work 8 h 8 h	5/06 Ovt. Work 0 h 0 h	Tue 5/16/0 Baseline Work 0 h 0 h Tue 5/16/0	6 Act. Work 0 h 0 h	\$0.00 Rem. Work			·	
.5.2.12.4	Notes WBS D Milestor ID 39 59 Notes WBS D This sur	efinition- ne- Runllb silicon coc Technical com Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task operates Demonstrate Fo	nd Ready pled and ready missioni Units 100% 100% silicon from	dy for technical dy for the dy for technical dy for the dy	nilb Silicon Baseline Cost \$0.00 \$0.00 n, demonstrates i	g. Act. Cost \$0.00 \$0.00 ts full operabi	\$379.60 \$0.00	Mon 5/1 Work 8 h 8 h	5/06 Ovt. Work 0 h 0 h	Tue 5/16/0 Baseline Work 0 h 0 h Tue 5/16/0	6 Act. Work 0 h 0 h	\$0.00 Rem. Work 8 h 8 h	\$0.00	\$379.60	\$379.60	
.5.2.12.4 .5.2.13	Notes WBS D Mileston ID 39 Sep Notes WBS D This sur	efinition- ne- Runllb silicon coc Technical com Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task operates Demonstrate Fu Resource Name PhysicisitU efinition-	nd Ready Imissioni Units 100% 100% silicon from Units 400%	r for Tech dy for technic ng of Rur Cost \$379.60 \$0.00 a control roor billity of all Cost Ba \$0.00	nillb Silicon Baseline Cost \$0.00 m, demonstrates in Channels from the seline Cost \$0.00	Act. Cost \$0.00 \$0.00 ts full operabi m Control F	\$379.60 \$0.00 sility.	Mon 5/1 Work 8 h 8 h	5/06 Ovt. Work 0 h 0 h	Tue 5/16/0 Baseline Work Oh Oh Sh Sh Act Seline Work Act Act	6 Act. Work 0 h 0 h	\$0.00 Rem. Work 8 h 8 h	\$0.00	\$379.60	\$379.60	
.5.2.13.1 .5.2.13.1	Notes WBS D Milestor ID 39 59 Notes WBS D This sur ID 12 Notes WBS D Electric M&S B0	efinition- ne- Runlib silicon coc Technical com Resource Name Senion/MechEngF Russ Rucinski efinition- mmary task operates Demonstrate For Resource Name PhysicistU efinition- al/connectivity integria	nd Ready Imissioni Units 100% 100% silicon from Units 400%	r for Tech dy for technic ng of Rur Cost \$379.60 \$0.00 a control roor billity of all Cost Ba \$0.00	nillb Silicon Baseline Cost \$0.00 m, demonstrates in Channels from the seline Cost \$0.00	Act. Cost \$0.00 \$0.00 ts full operabi m Control F	\$379.60 \$0.00 sility.	Mon 5/1 Work 8 h 8 h	5/06 Ovt. Work 0 h 0 h	Tue 5/16/0 Baseline Work Oh Oh Sh Sh Act Seline Work Act Act	6 Act. Work 0 h 0 h	\$0.00 Rem. Work 8 h 8 h	\$0.00	\$379.60	\$379.60	
.5.2.12.4 .5.2.13	Notes WBS D Milestor ID 39 59 Notes WBS D This sur	efinition- ne- Runllb silicon coc Technical com Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task operates Demonstrate For Resource Name PhysicistU efinition- al/connectivity integri	nd Ready Imissioni Units 100% 100% silicon from Units 400%	r for Tech dy for technic ng of Rur Cost \$379.60 \$0.00 a control roor billity of all Cost Ba \$0.00	nillb Silicon Baseline Cost \$0.00 m, demonstrates in Channels from the seline Cost \$0.00	Act. Cost \$0.00 \$0.00 ts full operabi m Control F	\$379.60 \$0.00 sility.	Mon 5/1 Work 8 h 8 h	5/06 Ovt. Work 0 h 0 h	Tue 5/16/0 Baseline Work Oh Oh Sh Sh Act Seline Work Act Act	6 Act. Work 0 h 0 h	\$0.00 Rem. Work 8 h 8 h	\$0.00	\$379.60	\$379.60	

		Name						Start		Finish		M&S EQ	M&S Labor	FNAL Labor	Total Cost
2.13.2		Demonstrate Fu		•				Mon 5/15/06		Tue 5/16/06		\$0.00	\$0.00	\$0.00	\$0.00
	1D 11	Resource Name PhysicistF	Units 400%	Cost Bas \$0.00	seline Cost Ac \$0.00	t. Cost Re \$0.00	m. Cost W \$0.00	ork Ovt. Work	Base h	eline Work Act. W	ork R	Rem. Work 32 h			
		r nysicistr	400%	φυ.υυ	φυ.υυ	φυ.υυ	φυ.υυ	JE 11 (11	υn	UII	32 II			
	WBS De														
		al/connectivity integrit	y of the silic	on is checke	d in this task.										
	M&S BO	DE-													
	NA														
	Labor B														
	Run2a	experience forms the	basis of the	estimates fo	r labor.										
												••••			
2.13.3		Technical Com	ımıssıonı	ing of Silic	con Complete	ed		Tue 5/16/06		Tue 5/16/06		\$0.00	\$0.00	\$0.00	\$0.00
	Notes WBS De	efinition-													
		ne- RunIIb silicon tech	nnical comm	nissioning cor	mpleted.										
2.14		Make Up Outer	Beampi	pes, Leak	check			Tue 5/16/06		Tue 5/23/06		\$0.00	\$0.00	\$9,231.20	\$9,231.20
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost		Work		Act. Work	Rem. Work	_		
	39 59	SeniorMechEngF Russ Rucinski	100% 100%	\$1,898.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$1,898.00 \$0.00	40 h 40 h	0 h 0 h	0 h 0 h	0 h 0 h				
	Notes														
	WBS De				FO 1 " 11		NIEO!								
	ı nıs sur	mmary task closes the	e detector, s	surveyes the	⊏∪, makes final l	eakcheck at S	DINEG S.								
2.14.1		Remove gap ha	rdworo (Close EC's	EE'a Bamai	o Long LO	Te	Tue 5/16/06		Wed 5/17/06		\$0.00	\$0.00	\$1,298.80	\$1,298.80
2.14.1	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost		Work		Act. Work	Rem. Work	φ0.00	\$1,290.00	\$1,290.00
	39	SeniorMechEngF	100%	\$379.60	\$0.00	\$0.00	\$379.60	8 h	0 h	0 h	0 h	8 h	=		
	40 49	SeniorMechTechF GapN	400% 200%	\$919.20 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$919.20 \$0.00	32 h 16 h	0 h 0 h	0 h 0 h	0 h 0 h				
	50	GapS	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h			
	51 105	Cathedral Jim Fagan	200% 100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	16 h 8 h	0 h 0 h	0 h 0 h	0 h 0 h				
	Notes	Ü													
	WBS De							11 24	=	0, , , , ,					
		* .	s naroware	, closes EC s	, use locking bar	to fix location	or beampipe a	issembly with res	pect to E	Cs, closes Ers, ma	kes work p	platform on 5 mi	on sniela briages, r	emoves beampipe space	er and long tool from ECS pipe.
	M&S BO NA	DE-													
	Labor B	OE- and 2004 shudown ex	rnorionaa fa	rme the basis	of actimate for	ffort									
	Nullia		•			mort.									
2.14.2		Install SNEG pi			•			Wed 5/17/06		Fri 5/19/06		\$0.00	\$0.00	\$2,597.60	\$2,597.60
	ID 39	Resource Name SeniorMechEngF	Units 100%	Cost \$759.20	Baseline Cost \$0.0	Act. Cost 0 \$0.0	Rem. Cost 3 \$759.2		vt. Work 0 h	Baseline Work 0 h	Act. Work	Rem. Work			
	40	SeniorMechTechF	400%	\$1,838.40	\$0.0	\$0.0	\$1,838.4	0 64 h	0 h	0 h	0) h 64)		
	105	Jim Fagan	100%	\$0.00	\$0.0	0 \$0.0	0 \$0.0	0 16 h	0 h	0 h	0) h 16	1		
	Notes WBS De	efinition-													
	This tas	k installs S SNEG, be	ellows, cross	s and tee; adj	justs bellows at o	ross if necess	ary, evacuates	s beam pipe via p	ump in tu	innel; removes N spa	acer and p	ourge; install N S	NEG, cross and tee	; adjusts bellows at cross	s if necessary; evacuates pipe at D
		cks pipe assembly; (i	f leak, must	open EF's, re	emove pipe brac	e bars, open l	C's, install ga	o hardware, rema	ike inner j	joint).					
	ieakcne														
	M&S BO	DE-													
		DE-													
	M&S BO NA Labor B	OE-													
	M&S BO NA Labor B		xperience fo	rms the basis	s of estimate for e	effort.									
	M&S BO NA Labor B	OE-		rms the basis	s of estimate for e	effort.		Wed 5/17/06		Fri 5/19/06		\$0.00	\$0.00	\$919.20	\$919.20
	M&S BO NA Labor B Runlla a	OE- and 2004 shudown ex Survey Muon C Resource Name	Trusses Units	Cost E	Baseline Cost	Act. Cost		Work Ovt. W		aseline Work Act.	Work	Rem. Work	\$0.00	\$919.20	\$919.20
	M&S BO NA Labor B Runlla a	OE- and 2004 shudown ex Survey Muon C	Trusses				Rem. Cost \$919.20		ork Bi		Work 0 h	*	\$0.00	\$919.20	\$919.20
2.14.3	M&S BO NA Labor B Runlla a ID 41 Notes	OE- and 2004 shudown ex Survey Muon C Resource Name SurveyorF	Trusses Units	Cost E	Baseline Cost	Act. Cost		Work Ovt. W		aseline Work Act.		Rem. Work	\$0.00	\$919.20	\$919.20
2.14.3	M&S BONA Labor B Runlla a ID 41 Notes WBS De	OE- and 2004 shudown ex Survey Muon C Resource Name SurveyorF	Trusses Units 200%	Cost E	Baseline Cost	Act. Cost		Work Ovt. W		aseline Work Act.		Rem. Work	\$0.00	\$919.20	\$919.20
2.14.3	M&S BONA Labor B Runlla a ID 41 Notes WBS De	OE- and 2004 shudown exits a survey Muon C Resource Name SurveyorF efinition- k surveys the C-layer	Trusses Units 200%	Cost E	Baseline Cost	Act. Cost		Work Ovt. W		aseline Work Act.		Rem. Work	\$0.00	\$919.20	\$919.20

VBS		Name						Start		Finish	l	M&S EQ	M&S Labor	FNAL Labor	Total Cost	
Survey M		Trusses" continue	d													
	Notes Runlla	experience forms the	basis of es	timate for this	task.											
.5.2.14.4	ID	Activate SNEG's Resource Name		04	Deselles Cost	4-4 04	D 0	Fri 5/19/06 Work Ovt. W	1//-	Tue 5/23/06 Baseline Work	Act. Work	\$0.00 Rem. Work	\$0.00	\$1,218.80	\$1,218.80	
	39	SeniorMechEngF	Units 100%	Cost \$759.20	Baseline Cost \$0.00	Act. Cost \$0.00	Rem. Cost \$759.20	16 h	0 h	0 h	0 h	16 h	_			
	40 105	SeniorMechTechF Jim Fagan	100% 100%	\$459.60 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$459.60 \$0.00	16 h 16 h	0 h 0 h	0 h 0 h	0 h 0 h	16 h 16 h				
		efinition- k bakes out the SNEC	G pipes (24	hrs@110C, 2	4hrs@190C).											
	M&S BO	DE-														
		05														
	Labor B 2004 sh	udown experience for	ms the bas	is of estimate	for effort.											
5.2.14.5		Open EF's, Insta						Fri 5/19/06		Mon 5/22/06		\$0.00	\$0.00	\$1,298.80	\$1,298.80	
	ID 39	Resource Name SeniorMechEngF	Units 100%	Cost \$379.60	Baseline Cost \$0.00	Act. Cost \$0.00	Rem. Cost \$379.60	Work Ovt. W	Vork 0 h	Baseline Work A	Act. Work 0 h	Rem. Work 8 h	_			
	40 105	SeniorMechTechF Jim Fagan	400% 100%	\$919.20 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$919.20 \$0.00	32 h 8 h	0 h 0 h	0 h 0 h	0 h 0 h	32 h				
	Notes	om r agan	10070	φ0.00	φ0.00	φ0.00	φ0.00	011	011	011	011	011				
	WBS De					· · ·										
		k retracts muon shield	a briage arn	ns into C trus	s and opens the	EF irons; insta	alis BLM's in E	r irons and connec	cts cables	S.						
	M&S BO NA	DE-														
	Labor B Runlla e	experience involving n	nanipulation	of FC's form	s the basis of es	timate										
		experience involving n	nanipulatior	of EC's form	s the basis of es	stimate.										
5.2.15						timate.		Mon 5/22/06		Tue 5/30/06		\$0.00	\$0.00	\$8,776.70	\$8,776.70	
5.2.15	Runlla e	Close and Surv	vey Detec	ctor for Op	eration Baseline Cost	Act. Cost	Rem. Cost	Work Ovt. W		Baseline Work A	Act. Work	Rem. Work	\$0.00	\$8,776.70	\$8,776.70	
5.2.15	Runlla e	Close and Surv	vey Detec	ctor for Op	eration				Vork 0 h 0 h		Act. Work 0 h 0 h		\$0.00	\$8,776.70	\$8,776.70	
5.2.15	Runlla e	Close and Surv Resource Name SeniorMechEngF	Vey Detection	Cost \$2,087.80	peration Baseline Cost \$0.00	Act. Cost	Rem. Cost \$2,087.80	Work Ovt. W	0 h	Baseline Work A	0 h	Rem. Work 44 h	\$0.00 -	\$8,776.70	\$8,776.70	
5.2.15	ID 39 59 Notes WBS De	Close and Surv Resource Name SeniorMechEngF Russ Rucinski	Units 100% 100%	Cost \$2,087.80 \$0.00	Baseline Cost \$0.00 \$0.00	Act. Cost \$0.00 \$0.00	Rem. Cost \$2,087.80 \$0.00	Work Ovt. W	0 h	Baseline Work A	0 h	Rem. Work 44 h	\$0.00	\$8,776.70	\$8,776.70	
5.2.15	ID 39 59 Notes WBS De	Close and Surv Resource Name SeniorMechEngF Russ Rucinski	Units 100% 100%	Cost \$2,087.80 \$0.00	Baseline Cost \$0.00 \$0.00	Act. Cost \$0.00 \$0.00	Rem. Cost \$2,087.80 \$0.00	Work Ovt. W	0 h	Baseline Work A	0 h	Rem. Work 44 h	\$0.00 -	\$8,776.70	\$8,776.70	
	ID 39 59 Notes WBS De	Close and Surv Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task closes the	Units 100% 100%	Cost \$2,087.80 \$0.00	Baseline Cost \$0.00 \$0.00	Act. Cost \$0.00 \$0.00	Rem. Cost \$2,087.80 \$0.00 SNEG's.	Work Ovt. W 44 h 44 h	0 h	Baseline Work A 0 h 0 h	0 h	Rem. Work 44 h 44 h	_			
	ID 39 59 Notes WBS De This sur	Close and Surv Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task closes the Repair N A-Laye Resource Name	Units 100% 100% e detector, s Units	Cost \$2,087.80 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00	Rem. Cost \$2,087.80 \$0.00 SNEG's.	Work Ovt. W	0 h 0 h	Baseline Work A 0 h 0 h 0 h Wed 5/24/06	0 h 0 h	Rem. Work 44 h	\$0.00 - \$0.00	\$8,776.70 \$919.20	\$8,776.70 \$919.20	
	ID 39 59 Notes WBS De This sur	Close and Surv Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task closes the Repair N A-Laye Resource Name PhysicistF	Units 100% 100% 100% detector, ser MDT, counits 200%	Stor for Op Cost \$2,087.80 \$0.00 Surveyes the E	Baseline Cost \$0.00 \$0.00 \$0.00 EC, makes final le	Act. Cost \$0.00 \$0	Rem. Cost \$2,087.80 \$0.00 SNEG's.	Work Ovt. W 44 h 44 h Won 5/22/06 Work Ovt. Work 32 h	0 h 0 h k Ba:	Baseline Work	0 h 0 h Work 0 h	\$0.00 Rem. Work	_			
	ID 39 59 Notes WBS De This sur	Close and Surv Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task closes the Repair N A-Laye Resource Name	Units 100% 100% e detector, s Units	Cost \$2,087.80 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 eakcheck at \$	Rem. Cost \$2,087.80 \$0.00 SNEG's.	Work Ovt. W 44 h 44 h Won 5/22/06 Work Ovt. Work 32 h	0 h 0 h	Baseline Work 0 h 0 h 0 h V Act. Wed 5/24/06 seline Work Act.	0 h 0 h	Rem. Work 44 h 44 h \$0.00 Rem. Work	_			
	ID 39 59 Notes WBS De This sur	Close and Surv Resource Name SeniorMechEngF Russ Rucinski efinition- nmary task closes the Repair N A-Laye Resource Name PhysicistF SurveyorF efinition-	rey Detect Units 100% 100% e detector, s er MDT, c Units 200% 200%	Cost \$2,087.80 \$0.00 \$0.	Baseline Cost \$0.00 \$0.00 \$0.00 EC, makes final le //ey aseline Cost \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$2,087.80 \$0.00 SNEG's. Rem. Cost \$0.00 \$919.20	Work Ovt. W 44 h 44 h Won 5/22/06 Work Ovt. Work 32 h	0 h 0 h k Ba:	Baseline Work	0 h 0 h Work 0 h	\$0.00 Rem. Work	_			
	ID 39 59 Notes WBS De This sur	Close and Surve Resource Name SeniorMechEngF Russ Rucinski effinition- mmary task closes the Repair N A-Laye Resource Name PhysicistF SurveyorF	rey Detect Units 100% 100% e detector, s er MDT, c Units 200% 200%	Cost \$2,087.80 \$0.00 \$0.	Baseline Cost \$0.00 \$0.00 \$0.00 EC, makes final le //ey aseline Cost \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$2,087.80 \$0.00 SNEG's. Rem. Cost \$0.00 \$919.20	Work Ovt. W 44 h 44 h Won 5/22/06 Work Ovt. Work 32 h	0 h 0 h k Ba:	Baseline Work	0 h 0 h Work 0 h	\$0.00 Rem. Work	_			
	ID 39 Notes WBS De This sur ID 11 Notes WBS De This tas M&S BC	Close and Surv Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task closes the Repair N A-Laye Resource Name PhysicistF SurveyorF efinition- k opens N A PDT laye	rey Detect Units 100% 100% e detector, s er MDT, c Units 200% 200%	Cost \$2,087.80 \$0.00 \$0.	Baseline Cost \$0.00 \$0.00 \$0.00 EC, makes final le //ey aseline Cost \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$2,087.80 \$0.00 SNEG's. Rem. Cost \$0.00 \$919.20	Work Ovt. W 44 h 44 h Won 5/22/06 Work Ovt. Work 32 h	0 h 0 h k Ba:	Baseline Work	0 h 0 h Work 0 h	\$0.00 Rem. Work	_			
5.2.15 5.2.15.1	ID 39 59 Notes WBS De This sur	Close and Surv Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task closes the Repair N A-Laye Resource Name PhysicistF SurveyorF efinition- k opens N A PDT laye DE-	rey Detect Units 100% 100% e detector, s er MDT, c Units 200% 200%	Cost \$2,087.80 \$0.00 \$0.	Baseline Cost \$0.00 \$0.00 \$0.00 EC, makes final le //ey aseline Cost \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$2,087.80 \$0.00 SNEG's. Rem. Cost \$0.00 \$919.20	Work Ovt. W 44 h 44 h Won 5/22/06 Work Ovt. Work 32 h	0 h 0 h k Ba:	Baseline Work	0 h 0 h Work 0 h	\$0.00 Rem. Work	_			
	ID 39 59 Notes WBS De This sur	Close and Surv Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task closes the Repair N A-Laye Resource Name PhysicistF SurveyorF efinition- k opens N A PDT laye DE- OE-	rey Detect Units 100% 100% 100% e detector, s er MDT, c Units 200% 200% er, repairs 3	Sctor for Op Cost \$2,087.80 \$0.00 Surveyes the E close & sun Cost B \$0.00 \$919.20	Baseline Cost \$0.00 \$0.00 \$0.00 EC, makes final le /ey aseline Cost \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 so.00 eakcheck at \$ Act. Cost \$0.00 \$0.00 so.00 solutions A layer.	Rem. Cost \$2,087.80 \$0.00 SNEG's. Rem. Cost \$0.00 \$919.20	Work Ovt. W 44 h 44 h Won 5/22/06 Work Ovt. Work 32 h	0 h 0 h k Ba:	Baseline Work	0 h 0 h Work 0 h	\$0.00 Rem. Work	_			
	ID 39 59 Notes WBS De This sur ID 11 Notes WBS De This tas M&S BC NA Labor B Runlla e	Close and Surv Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task closes the Repair N A-Laye Resource Name PhysicistF SurveyorF efinition- k opens N A PDT laye DE-	rey Detect Units 100% 100% 100% e detector, s er MDT, c Units 200% 200% er, repairs 3	Schor for Op Cost \$2,087.80 \$0.00 Surveyes the E Close & surveyes the E \$0.00 \$919.20	Baseline Cost \$0.00 \$0.00 \$0.00 EC, makes final le Vey aseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 eakcheck at S Act. Cost \$0.00 so.00 arreys A layer.	Rem. Cost \$2,087.80 \$0.00 SNEG's. Rem. Cost \$0.00 \$919.20	Work Ovt. W 44 h 44 h Won 5/22/06 Work Ovt. Work 32 h	0 h 0 h k Ba:	Baseline Work	0 h 0 h Work 0 h	\$0.00 Rem. Work	_			
5.2.15.1	ID 39 59 Notes WBS De This sur ID 11 Notes WBS De This tas M&S BO NA Labor B Runlla e Assume	Close and Surv Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task closes the Repair N A-Laye Resource Name PhysicistF SurveyorF efinition- k opens N A PDT laye DE- OE- experience where this	rey Detect Units 100% 100% 100% e detector, s er MDT, c Units 200% 200% er, repairs 3	Schor for Op Cost \$2,087.80 \$0.00 Surveyes the E Close & surveyes the E \$0.00 \$919.20	Baseline Cost \$0.00 \$0.00 \$0.00 EC, makes final le Vey aseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 eakcheck at S Act. Cost \$0.00 so.00 arreys A layer.	Rem. Cost \$2,087.80 \$0.00 SNEG's. Rem. Cost \$0.00 \$919.20	Work Ovt. W 44 h 44 h Won 5/22/06 Work Ovt. Work 32 h	0 h 0 h k Ba:	Baseline Work A O h O h O h O h O h O h O h O h O h O	0 h 0 h Work 0 h	\$0.00 Rem. Work	\$0.00			
5.2.15.1	ID 39 59 Notes WBS De This sur ID 11 41 Notes WBS De This tas M&S BC NA Labor B Runlla e Assume	Close and Surv Resource Name SeniorMechEngF Russ Rucinski efinition- nmary task closes the Repair N A-Laye Resource Name PhysicistF SurveyorF efinition- k opens N A PDT laye DE- OCE- experience where this physicist do repairs a Survey EC's	vey Detect Units 100% 100% 100% e detector, s e detector, s e detector, s er MDT, c Units 200% 200% 200% task was d at night so s	Cost \$2,087.80 \$0.00 \$0.	Baseline Cost \$0.00 \$0.00 \$0.00 EC, makes final le (ey aseline Cost \$0.00 \$0.00 \$0.00 solution solu	Act. Cost \$0.00 \$0.00 eakcheck at S Act. Cost \$0.00 so.00 so.00 urveys A layer.	Rem. Cost \$2,087.80 \$0.00 SNEG's. Rem. Cost \$0.00 \$919.20	Work	0 h 0 h	Wed 5/24/06 Wed 5/24/06 Seline Work Act. 0 h 0 h	Oh Oh Work Oh Oh	\$0.00 Rem. Work 44 h 44 h \$0.00 Rem. Work 32 h 32 h	_			
5.2.15.1	ID 39 59 Notes WBS De This sur ID 11 41 Notes WBS De This tas M&S BC NA Labor B Runlla e Assume	Close and Survey Resource Name SeniorMechEngF Russ Rucinski efinition- nmary task closes the Repair N A-Laye Resource Name PhysicistF SurveyorF efinition- ik opens N A PDT laye DE- OE- experience where this is physicist do repairs a Survey EC's Resource Name	rey Detect Units 100% 100% 100% e detector, s e detector, s Units 200% 200% 200% task was d at night so s Units	Sctor for Op Cost \$2,087.80 \$0.00 Surveyes the E Cost Ba \$0.00 \$919.20 Surveyes the E Surveyes the E Surveyes the E	Baseline Cost \$0.00 \$0.00 \$0.00 EC, makes final le Solution \$0.00 \$0.00 Solution \$0.00 \$0.00 Solution \$0.00 \$0.00 Solution \$0.00 \$0.00 Solution \$0.00 S	Act. Cost \$0.00 \$0.00 eakcheck at S Act. Cost \$0.00 \$0.00 so.00 so.00 solutiveys A layer.	Rem. Cost \$2,087.80 \$0.00 SNEG's. Rem. Cost \$0.00 \$919.20	Work	O h O h K Ba. O h O h	Wed 5/24/06 Wed 5/24/06 Seline Work Act. 0 h 0 h Tue 5/23/06 Seline Work Act.	O h O h O h O h O h O h O h	\$0.00 Rem. Work 32 h 32 h \$0.00 Rem. Work	\$0.00	\$919.20	\$919.20	
	ID 39 59 Notes WBS De This sur ID 11 41 Notes WBS De This table NA Labor B Runlla e Assume	Close and Surv Resource Name SeniorMechEngF Russ Rucinski efinition- nmary task closes the Repair N A-Laye Resource Name PhysicistF SurveyorF efinition- k opens N A PDT laye DE- OCE- experience where this physicist do repairs a Survey EC's	rey Detect Units 100% 100% 100% e detector, s e detector, s Units 200% 200% 200% task was d at night so s Units	Cost \$2,087.80 \$0.00 \$0.	Baseline Cost \$0.00 \$0.00 \$0.00 EC, makes final le (ey aseline Cost \$0.00 \$0.00 \$0.00 solution solu	Act. Cost \$0.00 \$0.00 eakcheck at S Act. Cost \$0.00 so.00 so.00 urveys A layer.	Rem. Cost \$2,087.80 \$0.00 SNEG's. Rem. Cost \$0.00 \$919.20	Work	0 h 0 h	Wed 5/24/06 Wed 5/24/06 Seline Work Act. 0 h 0 h	Oh Oh Work Oh Oh	\$0.00 Rem. Work 44 h 44 h \$0.00 Rem. Work 32 h 32 h	\$0.00	\$919.20	\$919.20	
5.2.15.1	ID 39 59 Notes WBS De This sur ID 11 41 Notes WBS DE NA Labor B Runlla e Assume	Close and Surv Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task closes the Repair N A-Laye Resource Name PhysicistF SurveyorF efinition- k opens N A PDT laye DE- OE- experience where this e physicist do repairs a Survey EC's Resource Name SurveyorF	rey Detect Units 100% 100% 100% e detector, s e detector, s tunits 200% 200% 200% task was d at night so s Units 400%	Sctor for Op Cost \$2,087.80 \$0.00 Surveyes the E Cost Ba \$0.00 \$919.20 Surveyes the E Surveyes the E Surveyes the E	Baseline Cost \$0.00 \$0.00 \$0.00 EC, makes final le Solution \$0.00 \$0.00 Solution \$0.00 \$0.00 Solution \$0.00 \$0.00 Solution \$0.00 \$0.00 Solution \$0.00 S	Act. Cost \$0.00 \$0.00 eakcheck at S Act. Cost \$0.00 \$0.00 so.00 so.00 solutiveys A layer.	Rem. Cost \$2,087.80 \$0.00 SNEG's. Rem. Cost \$0.00 \$919.20	Work	O h O h K Ba. O h O h	Wed 5/24/06 Wed 5/24/06 Seline Work Act. 0 h 0 h Tue 5/23/06 Seline Work Act.	O h O h O h O h O h O h O h	\$0.00 Rem. Work 32 h 32 h \$0.00 Rem. Work	\$0.00	\$919.20	\$919.20	
5.2.15.1	ID 39 59 Notes WBS De This sur ID 11 41 Notes WBS DE NA Labor B Runlla e Assume	Close and Surv Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task closes the Repair N A-Laye Resource Name PhysicistF SurveyorF efinition- k opens N A PDT laye DE- OE- experience where this physicist do repairs a Survey EC's Resource Name SurveyorF efinition- k makes VSTAR surv	rey Detect Units 100% 100% 100% e detector, s e detector, s tunits 200% 200% 200% task was d at night so s Units 400%	Sctor for Op Cost \$2,087.80 \$0.00 Surveyes the E Cost Ba \$0.00 \$919.20 Surveyes the E Surveyes the E Surveyes the E	Baseline Cost \$0.00 \$0.00 \$0.00 EC, makes final le Solution \$0.00 \$0.00 Solution \$0.00 \$0.00 Solution \$0.00 \$0.00 Solution \$0.00 \$0.00 Solution \$0.00 S	Act. Cost \$0.00 \$0.00 eakcheck at S Act. Cost \$0.00 \$0.00 so.00 so.00 solutiveys A layer.	Rem. Cost \$2,087.80 \$0.00 SNEG's. Rem. Cost \$0.00 \$919.20	Work	O h O h K Ba. O h O h	Wed 5/24/06 Wed 5/24/06 Seline Work Act. 0 h 0 h Tue 5/23/06 Seline Work Act.	O h O h O h O h O h O h O h	\$0.00 Rem. Work 32 h 32 h \$0.00 Rem. Work	\$0.00	\$919.20	\$919.20	
5.2.15.1	ID 39 59 Notes WBS De This sur ID 11 41 Notes WBS De This tas M&S BC NA Labor B Runlla e Assume	Close and Surv Resource Name SeniorMechEngF Russ Rucinski efinition- mmary task closes the Repair N A-Laye Resource Name PhysicistF SurveyorF efinition- k opens N A PDT laye DE- OE- experience where this physicist do repairs a Survey EC's Resource Name SurveyorF efinition- k makes VSTAR surv	rey Detect Units 100% 100% 100% e detector, s e detector, s tunits 200% 200% 200% task was d at night so s Units 400%	Sctor for Op Cost \$2,087.80 \$0.00 Surveyes the E Cost Ba \$0.00 \$919.20 Surveyes the E Surveyes the E Surveyes the E	Baseline Cost \$0.00 \$0.00 \$0.00 EC, makes final le Solution \$0.00 \$0.00 Solution \$0.00 \$0.00 Solution \$0.00 \$0.00 Solution \$0.00 \$0.00 Solution \$0.00 S	Act. Cost \$0.00 \$0.00 eakcheck at S Act. Cost \$0.00 \$0.00 so.00 so.00 solutiveys A layer.	Rem. Cost \$2,087.80 \$0.00 SNEG's. Rem. Cost \$0.00 \$919.20	Work	O h O h K Ba. O h O h	Wed 5/24/06 Wed 5/24/06 Seline Work Act. 0 h 0 h Tue 5/23/06 Seline Work Act.	O h O h O h O h O h O h O h	\$0.00 Rem. Work 32 h 32 h \$0.00 Rem. Work	\$0.00	\$919.20	\$919.20	
5.2.15.1	ID 39 59 Notes WBS De This sur ID 11 41 Notes WBS De This tas M&S BC NA Labor B Runlla e Assume	Close and Surv Resource Name SeniorMechEngF Russ Rucinski efinition- nmary task closes the Repair N A-Laye Resource Name PhysicistF SurveyorF efinition- ik opens N A PDT laye DE- OE- experience where this physicist do repairs a physicist do repairs a survey EC's Resource Name SurveyorF efinition- ik makes VSTAR surv DE-	rey Detect Units 100% 100% 100% e detector, s er MDT, c Units 200% 200% 200% task was d at night so s Units 400%	Cost S2.087.80 S0.00 Surveyes the E Stose & S	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 eakcheck at S Act. Cost \$0.00 \$0.00 so.00 so.00 solutiveys A layer.	Rem. Cost \$2,087.80 \$0.00 SNEG's. Rem. Cost \$0.00 \$919.20	Work	O h O h K Ba. O h O h	Wed 5/24/06 Wed 5/24/06 Seline Work Act. 0 h 0 h Tue 5/23/06 Seline Work Act.	O h O h O h O h O h O h O h	\$0.00 Rem. Work 32 h 32 h \$0.00 Rem. Work	\$0.00	\$919.20	\$919.20	

		Name						Star	rt	Finish	N	/I&S EQ	M&S Labor	FNAL Labor	Total Cost	
2.15.3		Close CF; close	EF's					Wed 5/24/06	6	Thu 5/25/06		\$0.00	\$0.00	\$1,298.80	\$1,298.80	
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost		vt. Work		Work	Rem. Work	_			
	39 40	SeniorMechEngF SeniorMechTechF	100% 400%	\$379.60 \$919.20	\$0.00 \$0.00	\$0.00 \$0.00	\$379.60 \$919.20	8 h 32 h	0 h 0 h	0 h 0 h	0 h 0 h	8 h 32 h				
	105	Jim Fagan	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h				
	Notes															
	WBS De		- 1		051											
	inis tas	k removes gap access	s nardware	and closes (Ur S; CIOSES EF'S											
	M&S BC	DE-														
	NA															
	Labor B															
	Runlla e	experience involving n	nanipulatior	of CF's and	d EF's forms the b	asis of estima	ate.									
5.2.15.4		Remove SNEG						Thu 5/25/06		Fri 5/26/06		\$0.00	\$0.00	\$1,298.80	\$1,298.80	
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost		vt. Work		Work	Rem. Work	=			
	39 40	SeniorMechEngF SeniorMechTechF	100% 400%	\$379.60 \$919.20	\$0.00 \$0.00	\$0.00 \$0.00	\$379.60 \$919.20	8 h 32 h	0 h 0 h	0 h 0 h	0 h 0 h	8 h 32 h				
	105	Jim Fagan	100%	\$0.00	\$0.00	\$0.00	\$0.00	8 h	0 h	0 h	0 h	8 h				
	Notes															
	WBS De	efinition- k extends muon shield	d arme and	inetalle work	r nlatform: remove	e heat tanes f	from SNEGe i	netalle \/ETO ~	ounters or	SNEGs						
	rino tab	n caterius muon silleli	u anno anu	otalið WUIK	, planoini, remove	o near tapes I	IIOIII OINEGS, I	notano VETO D	oundia 01	1 O14LU3.						
	M&S BC	DE-														
	NA															
	Labor B															
	Runlla e	experience involving n	nanipulation	of CF's and	d EF's forms the b	asis of estima	ate.									
5.2.15.5		Make EF, CF St	ickmike s	urvey				Thu 5/25/06	6	Thu 5/25/06		\$0.00	\$0.00	\$344.70	\$344.70	
	ID	Resource Name	Units	04												
								Work Ovt. V		Baseline Work Act. Wo		Rem. Work				
	41	SurveyorF	300%	\$344.70	\$0.00	Act. Cost F \$0.00	Rem. Cost \$344.70	Work Ovt. V 12 h	Work E	Baseline Work Act. Wo	ork I 0 h	Rem. Work 12 h				
	41 Notes	SurveyorF														
	41 Notes WBS De	SurveyorF efinition-	300%	\$344.70												
	Notes WBS De This task	SurveyorF efinition- k makes stickmike su	300%	\$344.70												
	Notes WBS De This tas	SurveyorF efinition- k makes stickmike su	300%	\$344.70												
	M&S BC	SurveyorF efinition- k makes stickmike su DE-	300%	\$344.70												
	MBS De This tasi	SurveyorF efinition- k makes stickmike su DE- OE-	300% rvey of CF's	\$344.70 s, EF's.	\$0.00											
	MBS De This tasi	SurveyorF efinition- k makes stickmike su DE-	300% rvey of CF's	\$344.70 s, EF's.	\$0.00											
5.2.15.6	MBS De This tasi	SurveyorF efinition- k makes stickmike su DE- OE-	300% rvey of CF's	\$344.70 s, EF's.	\$0.00 Ort.				0 h				\$0.00	\$1,298.80	\$1,298.80	
5.2.15.6	MSS DO This task	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the t Extend muon sh Resource Name	nvey of CF's pasis of esti	\$344.70 s, EF's. mate for effc lose clams Cost	\$0.00 ort. Shells Baseline Cost	\$0.00 Act. Cost	\$344.70 Rem. Cost	12 h Fri 5/26/00 Work Ov	0 h 6 vt. Work	0 h Fri 5/26/06 Baseline Work Act.	0 h	12 h \$0.00 Rem. Work	_	\$1,298.80	\$1,298.80	
5.2.15.6	M&S BC NA Labor B Runlla e	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the b Extend muon sh Resource Name SeniorMechEngF	oasis of esti	\$344.70 s, EF's. mate for effc lose clams Cost \$379.60	\$0.00 ort. Shells Baseline Cost \$0.00	\$0.00 Act. Cost \$0.00	\$344.70 Rem. Cost \$379.60	Fri 5/26/00 Work Ov 8 h	6 vt. Work	Fri 5/26/06 Baseline Work Act.	0 h Work 0 h	\$0.00 Rem. Work 8 h	_	\$1,298.80	\$1,298.80	
5.2.15.6	MSS DO This task	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the t Extend muon sh Resource Name	nvey of CF's pasis of esti	\$344.70 s, EF's. mate for effc lose clams Cost	\$0.00 ort. Shells Baseline Cost	\$0.00 Act. Cost	\$344.70 Rem. Cost	12 h Fri 5/26/00 Work Ov	0 h 6 vt. Work	0 h Fri 5/26/06 Baseline Work Act.	0 h	12 h \$0.00 Rem. Work	_	\$1,298.80	\$1,298.80	
5.2.15.6	M&S BC NA Labor Brandle 6	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the t Extend muon sh Resource Name SeniorMechEngF SeniorMechEngF SeniorMechTechF	oasis of esticelding, counts 100% 400%	\$344.70 s, EF's. mate for effc lose clams Cost \$379.60 \$919.20	\$0.00 ort. Shells Baseline Cost \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$379.60 \$919.20	Fri 5/26/00 Work Ov 8 h 32 h	6 vt. Work 0 h	Fri 5/26/06 Baseline Work Act.	Work 0 h	\$0.00 Rem. Work 8 h 32 h	_	\$1,298.80	\$1,298.80	
5.2.15.6	M&S BC NA Labor B' Runlla 6 ID 39 40 105 Notes WBS De WBS De	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the besource Name SeniorMechEngF SeniorMechEngF Jim Fagan efinition-	operation of the state of the s	\$344.70 s, EF's. mate for effc lose clams Cost \$379.60 \$919.20 \$0.00	\$0.00 port. Shells Baseline Cost \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$379.60 \$919.20	Fri 5/26/00 Work Ov 8 h 32 h	6 vt. Work 0 h	Fri 5/26/06 Baseline Work Act.	Work 0 h	\$0.00 Rem. Work 8 h 32 h	_	\$1,298.80	\$1,298.80	
5.2.15.6	M&S BC NA Labor B' Runlla 6 ID 39 40 105 Notes WBS De WBS De	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the background substitution of the second substitution of t	operation of the state of the s	\$344.70 s, EF's. mate for effc lose clams Cost \$379.60 \$919.20 \$0.00	\$0.00 port. Shells Baseline Cost \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$379.60 \$919.20	Fri 5/26/00 Work Ov 8 h 32 h	6 vt. Work 0 h	Fri 5/26/06 Baseline Work Act.	Work 0 h	\$0.00 Rem. Work 8 h 32 h	_	\$1,298.80	\$1,298.80	
5.2.15.6	M&S BC NA Labor B Runlla e ID 39 40 105 Notes WBS De This tasi	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the b Extend muon sh Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan efinition- k extends the muon s	operation of the state of the s	\$344.70 s, EF's. mate for effc lose clams Cost \$379.60 \$919.20 \$0.00	\$0.00 port. Shells Baseline Cost \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$379.60 \$919.20	Fri 5/26/00 Work Ov 8 h 32 h	6 vt. Work 0 h	Fri 5/26/06 Baseline Work Act.	Work 0 h	\$0.00 Rem. Work 8 h 32 h	_	\$1,298.80	\$1,298.80	
5.2.15.6	M&S BC NA Labor B' Runlla 6 ID 39 40 105 Notes WBS De WBS De	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the b Extend muon sh Resource Name SeniorMechEngF SeniorMechTechF Jim Fagan efinition- k extends the muon s	operation of the state of the s	\$344.70 s, EF's. mate for effc lose clams Cost \$379.60 \$919.20 \$0.00	\$0.00 port. Shells Baseline Cost \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$379.60 \$919.20	Fri 5/26/00 Work Ov 8 h 32 h	6 vt. Work 0 h	Fri 5/26/06 Baseline Work Act.	Work 0 h	\$0.00 Rem. Work 8 h 32 h	_	\$1,298.80	\$1,298.80	
5.2.15.6	M&S BC NA Labor Br Runlla e ID 39 40 105 Notes WBS De This tasi M&S BC NA	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the because in the survey of t	operation of the state of the s	\$344.70 s, EF's. mate for effc lose clams Cost \$379.60 \$919.20 \$0.00	\$0.00 port. Shells Baseline Cost \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$379.60 \$919.20	Fri 5/26/00 Work Ov 8 h 32 h	6 vt. Work 0 h	Fri 5/26/06 Baseline Work Act.	Work 0 h	\$0.00 Rem. Work 8 h 32 h	_	\$1,298.80	\$1,298.80	
5.2.15.6	M&S BC NA Labor Brist Labo	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the because in the survey of the second of t	oasis of esti ielding, c Units 100% 400% hields, clos	s, EF's. mate for effc lose clams: Cost \$379.60 \$919.20 \$0.00 es the clams	\$0.00 ort. Shells Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$379.60 \$919.20	Fri 5/26/00 Work Ov 8 h 32 h	6 vt. Work 0 h	Fri 5/26/06 Baseline Work Act.	Work 0 h	\$0.00 Rem. Work 8 h 32 h	_	\$1,298.80	\$1,298.80	
5.2.15.6	M&S BC NA Labor Brist Labo	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the t Extend muon sh Resource Name SeniorMechTengF SeniorMechTenhF Jim Fagan efinition- k extends the muon s DE- OE-	oasis of esti ielding, c Units 100% 400% hields, clos	s, EF's. mate for effc lose clams: Cost \$379.60 \$919.20 \$0.00 es the clams	\$0.00 ort. Shells Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$379.60 \$919.20	Fri 5/26/00 Work Ov 8 h 32 h	6 vt. Work 0 h	Fri 5/26/06 Baseline Work Act.	Work 0 h	\$0.00 Rem. Work 8 h 32 h	_	\$1,298.80	\$1,298.80	
	M&S BC NA Labor Brist Labo	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the t Extend muon sh Resource Name SeniorMechTengF SeniorMechTenchF Jim Fagan efinition- k extends the muon s DE- OE- experience forms the t	pasis of esti	s, EF's. mate for effc lose clams: Cost \$379.60 \$919.20 \$0.00 es the clams mate for effc	\$0.00 ort. Shells Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$379.60 \$919.20	Fri 5/26/01 Work On 8 h 32 h 8 h	6 vt. Work Oh Oh	Fri 5/26/06 Baseline Work Act. 0 h 0 h 0 h	Work 0 h	\$0.00 Rem. Work 8 h 32 h 8 h	-			
	M&S BC MSS De This tasi M&S BC NA Labor B Runlla e ID 39 40 105 Notes WBS De This tasi M&S BC NA Labor B Runlla e	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the t Extend muon sh Resource Name SeniorMechTengF SeniorMechTenhF Jim Fagan efinition- k extends the muon s DE- OE-	pasis of esti	s, EF's. mate for effc lose clams: Cost \$379.60 \$919.20 \$0.00 es the clams mate for effc	\$0.00 ort. Shells Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$379.60 \$919.20	Fri 5/26/00 Work Ov 8 h 32 h	6 vt. Work Oh Oh	Fri 5/26/06 Baseline Work Act.	Work 0 h	\$0.00 Rem. Work 8 h 32 h	_	\$1,298.80 \$0.00	\$1,298.80 \$0.00	
	M&S BC NA Labor Brist Labo	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the textend muon sh Resource Name SeniorMechEngF SeniorMechEngF Jim Fagan efinition- k extends the muon s DE- OE- experience forms the textends the succession of the sextends the sexten	pasis of esti	s, EF's. mate for effc lose clams: Cost \$379.60 \$919.20 \$0.00 es the clams mate for effc	\$0.00 ort. Shells Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$379.60 \$919.20	Fri 5/26/01 Work On 8 h 32 h 8 h	6 vt. Work Oh Oh	Fri 5/26/06 Baseline Work Act. 0 h 0 h 0 h	Work 0 h	\$0.00 Rem. Work 8 h 32 h 8 h	-			
	M&S BC NA Labor Brandla e ID 39 40 105 Notes WBS De This tasi M&S BC NA Labor Brandla e	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the textend muon sh Resource Name SeniorMechEngF SeniorMechEngF Jim Fagan efinition- k extends the muon s DE- OE- experience forms the textends the succession of the sextends the sexten	pasis of esti ielding, c Units 100% 400% hields, clos	s, EF's. mate for effc lose clams Cost \$379.60 \$919.20 \$90.00 es the clams mate for effc am ends	\$0.00 ort. Shells Baseline Cost \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$379.60 \$919.20	Fri 5/26/01 Work On 8 h 32 h 8 h	6 vt. Work Oh Oh	Fri 5/26/06 Baseline Work Act. 0 h 0 h 0 h	Work 0 h	\$0.00 Rem. Work 8 h 32 h 8 h	-			
	M&S BC NA Labor Brandla 6 ID 39 40 105 Notes WBS De This tasi M&S BC NA Labor Brandla 6 Notes WBS De This tasi M&S BC NA Labor Brandla 6 Notes WBS De This tasi	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the textend muon sh Resource Name SeniorMechTenpF SeniorMechTenpF Jim Fagan efinition- k extends the muon s DE- OE- experience forms the textends the muon s Survey detector efinition- k makes VSTAR surv	pasis of esti ielding, c Units 100% 400% hields, clos	s, EF's. mate for effc lose clams Cost \$379.60 \$919.20 \$90.00 es the clams mate for effc am ends	\$0.00 ort. Shells Baseline Cost \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$379.60 \$919.20	Fri 5/26/01 Work On 8 h 32 h 8 h	6 vt. Work Oh Oh	Fri 5/26/06 Baseline Work Act. 0 h 0 h 0 h	Work 0 h	\$0.00 Rem. Work 8 h 32 h 8 h	-			
5.2.15.6 5.2.15.7	M&S BC NA Labor Brandla e ID 39 40 105 Notes WBS De This tasi M&S BC NA Labor Brandla e	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the textend muon sh Resource Name SeniorMechTenpF SeniorMechTenpF Jim Fagan efinition- k extends the muon s DE- OE- experience forms the textends the muon s Survey detector efinition- k makes VSTAR surv	pasis of esti ielding, c Units 100% 400% hields, clos	s, EF's. mate for effc lose clams Cost \$379.60 \$919.20 \$90.00 es the clams mate for effc am ends	\$0.00 ort. Shells Baseline Cost \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$379.60 \$919.20	Fri 5/26/01 Work On 8 h 32 h 8 h	6 vt. Work Oh Oh	Fri 5/26/06 Baseline Work Act. 0 h 0 h 0 h	Work 0 h	\$0.00 Rem. Work 8 h 32 h 8 h	-			
	M&S BC NA Labor Brandla e ID 39 40 105 Notes WBS De This tasi M&S BC NA Labor Brandla e Notes WBS De This tasi M&S BC NA Notes WBS De This tasi M&S BC NA	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the t Extend muon sh Resource Name SeniorMechEngF SeniorMechEngF SeniorMechTechF Jim Fagan efinition- k extends the muon s DE- OE- experience forms the tell Survey detector efinition- k makes VSTAR surv DE-	pasis of esti ielding, c Units 100% 400% hields, clos	s, EF's. mate for effc lose clams Cost \$379.60 \$919.20 \$90.00 es the clams mate for effc am ends	\$0.00 ort. Shells Baseline Cost \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$379.60 \$919.20	Fri 5/26/01 Work On 8 h 32 h 8 h	6 vt. Work Oh Oh	Fri 5/26/06 Baseline Work Act. 0 h 0 h 0 h	Work 0 h	\$0.00 Rem. Work 8 h 32 h 8 h	-			
	A1 Notes WBS De This tasi M&S BC NA Labor Br Runlla e ID 39 40 105 Notes WBS De This tasi M&S BC NA Labor Br Runlla e Notes WBS De This tasi M&S BC NA Labor Br Runlla e Notes WBS De This tasi M&S BC NA Labor Br Labor Br NA Labor Br NA Labor Br NA Labor Br	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the t Extend muon sh Resource Name SeniorMechEngF SeniorMechEngF SeniorMechTechF Jim Fagan efinition- k extends the muon s DE- OE- experience forms the tell Survey detector efinition- k makes VSTAR surv DE-	oasis of esti ielding, c Units 100% 400% 100% hields, clos centerbe	mate for effc lose clams Cost \$379.60 \$919.20 \$0.00 es the clams mate for effc am ends cbeam ends.	\$0.00 Shells Baseline Cost \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$379.60 \$919.20	Fri 5/26/01 Work On 8 h 32 h 8 h	6 vt. Work Oh Oh	Fri 5/26/06 Baseline Work Act. 0 h 0 h 0 h	Work 0 h	\$0.00 Rem. Work 8 h 32 h 8 h	-			
5.2.15.7	M&S BC NA Labor Branlla e M&S BC NA Labor Branlla e ID 39 40 105 Notes WBS De This tasi M&S BC NA Labor Branlla e Notes WBS De This tasi M&S BC NA Labor Branlla e Labor Branlla e Runlla e	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the I Extend muon sh Resource Name SeniorMechTengF Senior	pasis of estimilation of the content	s, EF's. mate for effc lose clams Cost \$379.60 \$919.20 \$0.00 es the clams mate for effc am ends theam ends.	\$0.00 Shells Baseline Cost \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$379.60 \$919.20	Fri 5/26/00 Work OI 8 h 32 h 8 h	6 vt. Work Oh Oh	Fri 5/26/06 Baseline Work Act. 0 h 0 h 0 h Fri 5/26/06	Work 0 h	\$0.00 Rem. Work 8 h 32 h 8 h	\$0.00	\$0.00	\$0.00	
	M&S BC NA Labor Branlla e M&S BC NA Labor Branlla e ID 39 40 105 Notes WBS De This tasi M&S BC NA Labor Branlla e Notes WBS De This tasi M&S BC NA Labor Branlla e Labor Branlla e Runlla e	SurveyorF efinition- k makes stickmike su DE- OE- experience forms the b Extend muon sh Resource Name SeniorMechTechF Jim Fagan efinition- k extends the muon s DE- OE- experience forms the b Survey detector efinition- k makes VSTAR surv DE- OE-	pasis of estimilation of center be every of center be assis of estimates of estimates and center of center	s, EF's. mate for effc lose clams Cost \$379.60 \$919.20 \$0.00 es the clams mate for effc am ends theam ends.	\$0.00 Shells Baseline Cost \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Rem. Cost \$379.60 \$919.20	Fri 5/26/00 Work Ot 8 h 32 h 8 h	6 vt. Work Oh Oh	Fri 5/26/06 Baseline Work Act. 0 h 0 h 0 h 7 Tri 5/26/06	Work 0 h	\$0.00 Rem. Work 8 h 32 h 8 h	-			

The tent control for the power supplies (controlled) The Controlled The power of the power	VBS	Name	Start	Finish	M&S EQ	M&S Labor	FNAL Labor	Total Cost	
Wisi Centralization This basis excess collision had and exercises magnet prover supplies. No.	est magne	ID Resource Name Units Cost Baseline Cost Act. Cost Rem.	29.80 8 h 0 h	0 h	0 h 8 h	_			
Ray Labor DEC- Figure 1		WBS Definition-							
Security									
Section Sect									
Second S	_	Notes	Tue 5/30/06	Tue 5/30/06	\$0.00	\$0.00	\$0.00	\$0.00	
Dr. Resource Name Units Cost Baseline Cost Act Cost Search Cost Work Ort Work Revenue Work Act Work Rem									
National Properties	.5.2.16	ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost 39 SeniorMechEngF 100% \$2,657.20 \$0.00 \$0.00 \$2,60	Cost Work Ovt. Work 57.20 56 h 0 h	Baseline Work Act. W	Ork Rem. Work 0 h 56 h	\$0.00	\$2,657.20	\$2,657.20	
S.2.16.1 Verify functionality of all SMT software - Univ	t	<u>Notes</u> WBS Definition- This task provides for the testing of the Online Readout Software, which includesthe unpacki this software is taken from Run IIa and modified for use at SiDet for the 1% and 10% silicon t	ng software which facilitates the	e data transfer from electro the Run IIb shutdown.	onic coordinates to ph	ysics coordinates, a	and the unpacking softw	are for L3 and offline ana	lysis. The majori
T2 Physicist 400% \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$224 h 0.h 0.h 0.h 224 h		Verify functionality of all SMT software - Univ	Tue 5/16/06	Thu 5/25/06	\$0.00	\$0.00	\$0.00	\$0.00	
Wiss Definition- This task verifies the functionality of the monitoring and downloading software of all silicon crates, data unpacking software (electronics to physics addressing). L3/offline software (Examine). MåS BOE- Note: This first primarity based on verifying the proper function of well-understood modifications made to the Run III a software. This task verifies the functionality of all SMT software - FNAL Fine Cost Note: Wiss Discourse Name Units Cost Baseline Cost Act Cost Rem. Cost Work Ort. Work Baseline Work Act. Work Rem. W	-	12 PhysicistU 400% \$0.00 \$0.00 \$0.00 \$0.00							
Labor BOE- This effort is primarily based on verifying the proper function of well-understood modifications made to the Run Ila software. Sociation	7	WBS Definition- This task verifies the functionality of the monitoring and downloading software of all silicon or data unpacking software (electronics to physics addressing), L3/offline software (Examine).	ates,						
S.2.16.2 Verify functionality of all SMT software - FNAL Notes Verify functionality of the monitoring and downloading software of all silicon crates, data unpacking software (electronics to physics addressing), L3/offline software (Examine). Notes Verify functionality of the monitoring and downloading software of all silicon crates, data unpacking software (electronics to physics addressing), L3/offline software (Examine). M&S BOE- Notes Verify functionality of the monitoring and downloading software of all silicon crates, data unpacking software (electronics to physics addressing), L3/offline software (Examine). M&S BOE- Notes Verify functionality of the monitoring and downloading software of all silicon crates, data unpacking software (electronics to physics addressing), L3/offline software (Examine). M&S BOE- Notes Verify functionality of the monitoring and downloading software of all silicon crates, data unpacking software (electronics to physics addressing), L3/offline software (Examine). M&S BOE- Notes Verify functionality of the monitoring and downloading software of all silicon crates, data unpacking software (electronics to physics addressing), L3/offline software (Examine). M&S BOE- Notes Verify functionality of the monitoring and downloading software of all silicon crates, data unpacking software (electronics to physics addressing), L3/offline software (Examine). M&S BOE- Notes Verify functionality of the monitoring and downloading software (Examine). M&S BOE- Notes Verify functionality of the monitoring and downloading software (Examine). M&S BOE- Notes Verify functionality of the monitoring and downloading software (Examine). M&S BOE- Notes Verify functionality of the monitoring and downloading software (Examine). M&S BOE- Notes Verify functionality of the monitoring and downloading software (Examine). M&S BOE- Notes Verify functionality of the monitoring and downloading software of all silicon crates, data unpac	1	NA Labor BOE-	s made to the Run IIa software.						
Till PhysicistF 400% \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$2.00 \$0.	.5.2.16.2	,			•	\$0.00	\$0.00	\$0.00	
This task verifies the functionality of the monitoring and downloading software of all silicon crates, data unpacking software (electronics to physics addressing), L3/offline software (Examine). M&S BOE- NA Labor BOE- This effort is primarily based on verifying the proper function of well-understood modifications made to the Run IIa software. 1.5.2.16.3 Silicon System Ready for Physics Commissioning Thu 5/25/06 Thu 5/2		11 PhysicistF 400% \$0.00 \$0.00 \$0.00 Notes							
Labor BOE- This effort is primarily based on verifying the proper function of well-understood modifications made to the Run Ila software. 5.2.16.3 Silicon System Ready for Physics Commissioning Thu 5/25/06 Thu 5/25/06 \$0.00 \$0.	7	This task verifies the functionality of the monitoring and downloading software of all silicon cr	ates,						
This effort is primarily based on verifying the proper function of well-understood modifications made to the Run IIa software. 1.5.2.16.3 Silicon System Ready for Physics Commissioning Thu 5/25/06 Thu 5/25/06 \$0.00	1	NA							
WBS Definition- Milestone-The RunIlb silicon system has been installed, technically commissioned, and is ready for physics commissioning. I.5.3 Run Ilb Trigger Installation & Technical Commissioning Tue 1/4/05 Tue 8/1/06 \$75,500.00 \$0.00 \$334,476.00 \$409,976.00 Notes WBS Definition- The Run Ilb trigger upgrade includes upgrades to three systems - the Level 1 calorimeter trigger, a calorimeter cluster track match at Level 1, and the Level 1 central track trigger, as well as upgrades to the Level 2 beta processors and the Trigger. This summary WBS element includes the effort required to install and initially commission these trigger upgrades.			made to the Run IIa software.						
1.5.3 Run Ilb Trigger Installation & Technical Commissioning Tue 1/4/05 Tue 8/1/06 \$75,500.00 \$0.00 \$334,476.00 \$409,976.00 Notes WBS Definition- The Run Ilb trigger upgrade includes upgrades to three systems - the Level 1 calorimeter trigger, a calorimeter cluster track match at Level 1, and the Level 1 central track trigger, as well as upgrades to the Level 2 beta processors and the Trigger. This summary WBS element includes the effort required to install and initially commission these trigger upgrades.	Ī	Notes WBS Definition-		Thu 5/25/06	\$0.00	\$0.00	\$0.00	\$0.00	
Notes WBS Definition- The Run IIb trigger upgrade includes upgrades to three systems - the Level 1 calorimeter trigger, a calorimeter cluster track match at Level 1, and the Level 1 central track trigger, as well as upgrades to the Level 2 beta processors and the Trigger. This summary WBS element includes the effort required to install and initially commission these trigger upgrades.				Tue 8/1/06	\$75,500.00	\$0.00	\$334,476.00	\$409,976.00	
	Ĭ.	Notes WBS Definition- The Run IIb trigger upgrade includes upgrades to three systems - the Level 1 calorimeter trig	gger, a calorimeter cluster track						Level 2 Silicon Tra
10.5.1 Frepare minastructure at DAD Tue 1/4/05 Fri 5/5/06 \$0.00 \$0.00 \$15,088.00 \$15,088.00	.5.3.1	Prepare Infrastructure at DAB	Tue 1/4/05	Fri 5/5/06	\$0.00	\$0.00	\$15,088.00	\$15,088.00	

WBS Name Start Finish M&S EQ M&S Labor **FNAL Labor Total Cost** "Prepare Infrastructure at DAB" continued This summary task includes activities that must take place to ensure that all infrastructure components required for the Run IIb trigger (Cal L1 racks, Cal BLS cables, L1 Cal/Track Match crates, boards, and cables) are in hand prior to shutdown. 1.5.3.1.3 \$0.00 Make Muon PDT and SFE Mods for CTM Tue 1/4/05 Tue 3/1/05 \$0.00 \$15,088.00 \$15,088.00 Ovt. Work Baseline Work Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Act. Work Rem. Work 11 37 PhysicistF 32 h \$3 772 00 SeniorFlecEngE 100% \$15,088,00 \$0.00 \$11,316,00 320 h 0 h Ωh 240 h 80 h 86 100% \$0.00 320 h 0 h 0 h 240 h Sten Hansen \$0.00 \$0.00 \$0.00 80 h 87 Tom Fitzpatrick 50% \$0.00 \$0.00 \$0.00 120 h \$0.00 160 h 0 h 0 h 40 h \$0.00 \$0.00 WBS Definition-Develop and demonstrate modification of muon PDT frontends for pipeline extension, and firmware for Scintillator front ends. M&S BOE -NA Labor BOE - Run2a muon Level 1 experience with PDT board maintenance & development. Sten Hansen develops PDT board change at "mini", Al Ito proves R&D board (s) performance in detector. Tom Fitzpatrick develops Scintillator Firmware. 1.5.3.1.4 Develop CTM Operating Software-Arizona Fri 7/22/05 Tue 4/25/06 \$0.00 \$0.00 \$0.00 \$0.00 Resource Name Units Cost Raseline Cost Work Ovt Work Raseline Work Act Work Rem Work Act Cost 12 PhysicistU 100% \$0.00 \$0.00 \$0.00 \$0.00 800 h 0 h 0 h WBS Definition-Develop software required to operate CTM: modify Vxworks (processor, L1CTM flavor,...); add L1CTM to cold-start GUI, to input GUI, to parity-check GUI, to mtm-term GUI, power supply GUI, RM/RMI GUI, comics notebook GUI; develop Quicktest/quickcheck script; COOR trigger terms download; add L1CTM to online simulator-hardware comparison code, to online efficiency code; generate first-pass trigger logic (e.g. BOT, L1CTT-only, L1Cal-only, L1CTT and L1Cal for electrons, taus, jets); online web pages and Develop offline software: read L1CTM from RDS, TMB; tsim_L1caltrack; L1caltrack_analyze(unpacker); L1L2_evt (into TMB); examine; documentation M&S BOE- NA Labor BOE- two physicists working full time. Effort not managed by Upgrade Project. 1.5.3.1.5 Develop CTM Operating Software-FNAL Fri 7/22/05 Tue 4/25/06 \$0.00 \$0.00 \$0.00 \$0.00 Work Ovt. Work Baseline Work Act. Work Rem. Work Physicisti \$0.00 \$0.00 800 h 11 0 h Notes WBS Definition-Develop software required to operate CTM; modify Vxworks (processor, L1CTM flavor...); add L1CTM to cold-start GUI, to input GUI, to parity-check GUI, to mtm-term GUI, power supply GUI, RM/RMI GUI, comics notebook GUI; develop Quicktest/quickcheck script; COOR trigger terms download; add L1CTM to online simulator-hardware comparison code, to online efficiency code; generate first-pass trigger logic (e.g. BOT, L1CTT-only, L1Cal-only, L1CTT and L1Cal for electrons, taus, jets); online web pages and Develop offline software: read L1CTM from RDS, TMB; tsim_L1caltrack; L1caltrack_analyze(unpacker); L1L2_evt (into TMB); examine; documentation M&S BOE- NA Labor BOE- two physicists working full time. Effort not managed by Upgrade Project. Share with U as soon as U specified. 1.5.3.1.7 Preliminary Commissioning of L1 CTT elements-Upgrade Wed 1/19/05 Thu 9/15/05 \$0.00 \$0.00 \$0.00 \$0.00 Notes This task provides for the precommissioning of DFEB's (new DFEA backplane and crate controller also) as they become available. All operating software -- PS control for DFEB crates, raw ethernet driver, raw ethernet serializer, DFEB boards added to dfe_ware database, download interface for DFEB to dfe_ware,...is verified during these tests. M&S BOE-Labor BOE- None. All effort provided by Upgrade Project. 1.5.3.1.8 \$0.00 \$0.00 Preliminary Commissioning of L1 CTM elements-Arizona Wed 11/30/05 Tue 4/25/06 \$0.00 \$0.00 Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work 12 PhysicistU \$0.00 \$0.00 \$0.00 \$0.00 400 h Notes WBS Definition-This task provides for the installation of L1MU trigger and crate manager cards in new L1 CTM crate installed in MCH1, begin the technical commissioning of L1 CTM (BOT triggers to TFW, etc.) then replace with production L1 CTM trigger and crate manager cards as they become available

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M&S BOE-NA

BS		Name							Start	Fi	nish	M&S EQ	M&S Labor	FNAL Labor	Total Cost	
eliminar	y Com	missioning of L	1 CTM ele	nents-Ari	zona" contii	nued										
	Notes															
	Labor B		vorking half ti	ne are requ	ired for this ta	sk. Task dura	ation extends u	ntil last hard	dware compor	nent of L1 CTM is ins	stalled in MO	CH1.				
5.3.1.9		Preliminary C	ommission	ina of L1	CTM eleme	nts-FNAL		Wed 1	1/30/05	Tue 4/2	5/06	\$0.00	\$0.00	\$0.00	\$0.00	
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		efinition-	installation of	I 1MU trigge	er and crate m	anager cards	in new I 1 CTN	A crate insta	alled in MCH1	begin the technical	commission	ning of L1 CTM (B)	OT triggers to TFW_et	c) then replace with prod	duction L1 CTM trigger and	crate ma
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.3.1.10		Prepare Safe	ty and PO	RC docu	mentation			Mon	6/20/05	Fri 7/	1/05	\$0.00	\$0.00	\$0.00	\$0.00	
	Notes	- fi - isi														
		efinition- mmary task prepar	es necessarv	PORCs ("P	artial Operatio	nal Readines	s Clearance") s	safety docu	mentation for	unattended operation	n of new ha	rdware for trigger i	upgrade.			
				(.				. ,								
5.3.1.10.	1	Prepare POR	C for L1C1	M Crates	- FNAL			Mon	6/20/05	Fri 7/	1/05	\$0.00	\$0.00	\$0.00	\$0.00	
	ID	Resource Name			aseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work		Act. Work	Rem. Work	******	*****	******	
	11	PhysicistF	50% 50%	\$0.00	\$0.00 \$0.00	\$0.00	\$0.00 \$0.00	40 h 40 h	0 h 0 h	0 h 0 h	0 h	40 h 40 h				
	55	Linda Baqby						40 n			0 h	40 n				
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	WBS D Ables M&S BK MAS BK	sk provides effort for the folion are not novel. OS- BOE- on Runlla experiennel. Prepare POR Resource Name PhysicistU Jeff Temple Definition- sk provides effort for the folion are not novel. OS- BOE- on Runlla experiennel. Trigger Safe	ce and consider the preparation of the preparation	ering that remarks and the sering that remarks and the sering that remarks are remarks	afety documer eview/updating - UAZ aseline Cost \$0.00 \$0.00 afety documer eview/updating	Act. Cost \$0.00 \$0.00 station and Po	ORC, including ocumentation of \$0.00 \$0.00 DRC, including	Mon Work 40 h 40 h "walk-thrus	the bulk of the 6/20/05 Ovt. Work 0 h 0 h " required for	task, one week time Fri 7/ Baseline Work 0 h 0 h permission to operate task, one week time	te the system by an elect 1/05 Act. Work 0 h 0 h te the system by an elect	\$0.00 Rem. Work 40 h 40 h m, for the L1CTM of the L1C	d physicist are required \$0.00 crates in MCH1. The p	the for this task. Jeff Temple \$0.00 shows a second of the period of the period of the period of the period of this task. Jeff Temple the for this task. Jeff Temple the period of the p	so.00 \$0.00 ORC is that of the boards; ie and John Anderson are the	ne prefer
	WBS D Ables M&S BK MAS BK	sk provides effort for the control of the control o	ce and consider the preparation of the preparation	ering that remarks and the sering that remarks and the sering that remarks are remarks	afety documer eview/updating - UAZ aseline Cost \$0.00 \$0.00 afety documer eview/updating	Act. Cost \$0.00 \$0.00 station and Po	ORC, including ocumentation of \$0.00 \$0.00 DRC, including	Mon Work 40 h 40 h "walk-thrus	the bulk of the 6/20/05 Ovt. Work 0 h 0 h " required for	task, one week time Fri 7/ Baseline Work 0 h 0 h permission to operate task, one week time	te the system by an elect 1/05 Act. Work 0 h 0 h te the system by an elect	\$0.00 Rem. Work 40 h 40 h m, for the L1CTM of the L1C	d physicist are required \$0.00 crates in MCH1. The p	the for this task. Jeff Temple \$0.00 shows a second of the period of the period of the period of the period of this task. Jeff Temple the for this task. Jeff Temple the period of the p	so.00 \$0.00 ORC is that of the boards; ie and John Anderson are the	ne prefer
5.3.1.10.	WBS D Ables M&S BK MAS BK	sk provides effort for the control of the control o	ce and consider the preparation of the preparation	ering that respond to the solution of the solu	afety documer eview/updating - UAZ aseline Cost \$0.00 \$0.00 afety documer eview/updating mentation (Act. Cost \$0.00 \$0.00 station and Po	ORC, including ocumentation of \$0.00 \$0.00 DRC, including	Mon Work 40 h 40 h "walk-thrus	the bulk of the 6/20/05 Ovt. Work 0 h 0 h " required for	task, one week time Fri 7/ Baseline Work Oh Oh permission to operate task, one week time	te the system 1/05 Act. Work 0 h 0 h te the system b by an elect	\$0.00 Rem. Work 40 h 40 h m, for the L1CTM of	\$0.00 \$0.00 crates in MCH1. The p	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	ne prefer
	WBS D Initial and the second	sk provides effort for the folion are not novel. OS- BOE- on Runlla experiennel. Prepare POR Resource Name PhysicistU Jeff Temple Definition- sk provides effort for the folion are not novel. OS- BOE- on Runlla experiennel. Trigger Safe	ce and consider the preparation of the preparation	ering that respond to the solution of the solu	afety documer eview/updating - UAZ aseline Cost \$0.00 \$0.00 afety documer eview/updating mentation (Act. Cost \$0.00 \$0.00 station and Po	ORC, including ocumentation of \$0.00 \$0.00 DRC, including	Mon Work 40 h 40 h "walk-thrus	the bulk of the 6/20/05 Ovt. Work 0 h 0 h " required for	task, one week time Fri 7/ Baseline Work 0 h 0 h permission to operate task, one week time	te the system 1/05 Act. Work 0 h 0 h te the system b by an elect	\$0.00 Rem. Work 40 h 40 h m, for the L1CTM of the L1C	d physicist are required \$0.00 crates in MCH1. The p	the for this task. Jeff Temple \$0.00 shows a second of the period of the period of the period of the period of this task. Jeff Temple the for this task. Jeff Temple the period of the p	so.00 \$0.00 ORC is that of the boards; ie and John Anderson are the	ne prefer
.3.1.10.:	WBS D Motes WBS D Moles WBS D Moles WBS D Moles WBS D Moles WBS D	sk provides effort for too are not novel. OS- BOE- on Runlla experiennel. Prepare POR Resource Name PhysicistU Jeff Temple Definition- sk provides effort for tion are not novel. OS- BOE- on Runlla experiennel. Trigger Safe Definition- ne- Trigger safety are telinition-	ce and consider the preparation of the preparation	ering that remarks and the sering that remarks are remarks are remarks and the sering that remarks are remarks are remarks are	afety documer eview/updating - UAZ aseline Cost \$0.00 \$0.00 afety documer eview/updating mentation (Act. Cost \$0.00 \$0.00 station and PC	PRC, including Rem. Cost \$0.00 \$0.00 DRC, including	Mon Work 40 h 40 h "walk-thrus	the bulk of the 6/20/05 Ovt. Work 0 h 0 h " required for	task, one week time Fri 7/ Baseline Work Oh Oh permission to operate task, one week time Fri 7/ Fri 7/	te the system by an elect 1/05 Act. Work 0 h 0 h te the system by an elect 1/05	\$0.00 Rem. Work 40 h 40 h m, for the L1CTM of trical engineer, and \$0.00	\$0.00 crates in MCH1. The production of the prod	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	the crat

WBS	Name				Start	Finish	M&S EQ	M&S La	abor	FNAL Labor	Total Cost	
.5.3.1.12	•	etector Repairs		Th	u 3/9/0 6	Fri 5/5/06	\$0.00	\$0	0.00	\$0.00	\$0.00	
	Notes WBS Definition-	_										
	This summary task facilitates planning	for detector maintenance ac	tivities during the s	hutdown.								
.5.3.1.12.	.1 AFEII Stuff			Th	u 3/9/06	Thu 4/6/06	\$0.00) \$0	0.00	\$0.00	\$0.00	
.0.0	Notes	=			a 0/0/00		ψ0.00	Ψ.		ψ0.00	ψ0.00	
	WBS Definition- This task is a placeholder to accommo	date AFEII needs during the	shutdown.									
	M&S BOE-											
	NA											
	Labor BOE- NA											
5.3.1.12.	.2 Detector Repair and M	aintenance		Th	u 3/9/06	Thu 5/4/06	\$0.00) \$0	0.00	\$0.00	\$0.00	
	Notes	_										
	WBS Definition- This task is a placeholder to accommo	date detector maintenance r	needs during the sh	utdown.								
	M&S BOE-											
	NA											
	Labor BOE- NA											
.5.3.1.12.	.3 Cal Maintenance			Fri	3/10/06	Fri 5/5/06	\$0.00) \$0	0.00	\$0.00	\$0.00	
	Notes	_					*	*		• • • • •	*****	
	WBS Definition- This task is a placeholder to accommo	date calorimeter needs durir	ng the shutdown.									
	M&S BOE-											
	NA NA											
	Labor BOE-											
	NA											
5.3.1.12.	.4 Detector Repaired for Notes	Resumption of Physi	ics	Fi	i 5/5/06	Fri 5/5/06	\$0.00	\$0	0.00	\$0.00	\$0.00	
	WBS Definition-	_										
	Milestone- Detector repairs completed	•										
5.3.2	Level 1 Calorimeter T	rigger		Thu	9/15/05	Tue 8/1/06	\$73,000.00	\$0	0.00	\$265,763.50	\$338,763.50	
	Notes	_										
	WBS Definition- This summary element covers the Lev							nt and procureme	ent of trigger	-algorithm boards (T	AB), the provision of out	put signals to fa
	a match between calorimeter towers a	nd tracks, and procurement	and improvements	in associated reado	out crates, power su	upplies, cabling, and	controls hardware.					
5.3.2.1	L1 Cal Installation An	d Technical Commiss	sioning	Thu	9/15/05	Tue 8/1/06	\$73,000.00	\$0	0.00	\$265,763.50	\$338,763.50	
	Notes WBS Definition-	_										
	This summary task describes the insta				-							
.5.3.2.1.1					9/15/05	Tue 8/1/06	·		0.00	\$216,744.00	\$216,744.00	
.5.5.2.1.1	ID Resource Name Units	Cost Baseline Co	0.00 \$0.00	\$133,760.00	Work Ovt. Wor 3,520 h	0 h 0	h 0 h	em. Work 3,520 h				
J.J.Z.1.1	13 CompProfF 200%	\$133,760.00 \$			1,760 h	0 h 0	h Oh	1,760 h				
.0.0.2.1.1	37 SeniorElecEngF 100%	\$133,760.00 \$ \$82,984.00 \$	0.00 \$0.00	\$82,984.00	1,70011	011 0						
J.J.Z.1.1	37 SeniorElecEngF 100%	\$82,984.00 \$ —										
.0.0.2.1.1	37 SeniorElecEngF 100% Notes	\$82,984.00 \$ —						s during trigger i	nstallation et	ffort.		
.0.0.2.1.1	37 SeniorElecEngF 100%	\$82,984.00 \$ —						s during trigger i	nstallation ef	ffort.		

/BS		Name						Star	t	Finish	M&S E	a N	&S Labor	FNAL Labor	Total Cost
.5.3.2.1.2	2	Engineering S	Support - N	ISU				Thu 9/15/05	;	Tue 8/1/06	\$72,000.0	0	\$0.00	\$0.00	\$72,000.00
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cos		Ovt. Work	Baseline Work		em. Work	_		
	44 48	SeniorElecEngU MandS	200% 72,000	\$0.00 \$72,000.00	\$0.00 \$0.00	0 \$0.0 0 \$0.0	0 \$0 0 \$72,000		0 h	0 h	0 h 0	3,520 h 72,000			
	77	Dan Edmunds	100%	\$0.00	\$0.00	\$0.0	0 \$0	.00 1,760 h	0 h	0 h	0 h	1,760 h			
	78	Phillipe Laurens	100%	\$0.00	\$0.00	90.0	0 \$0	.00 1,760 h	0 h	0 h	0 h	1,760 h			
	Notes			_											
		efinition- sk provides for the si	upport of two	university en	gineers (D. Edm	unde Philline	a Laurene) full	time for oversight	consultation	and testing/monitor	orina tacke durina	triager inc	tallation effort		
	THIS tac	ik provides for the si	apport or two	outiliversity eng	gilloois (D. Edill	urius, i riiiipi	Laurerio, ruii	unic for oversigni	, consultation	and testing/monite	oring taoks during	ingger ins	anation chort.		
	M&S BO	DE- nt M&S for the supp	ort of the Lin	iversity engine	oro for the durat	tion of the nr	night starting	uban I 10al Tria f	abrication is a	ampleted					
	Sumicie	iii was ioi tile supp	on on the on	iiversity erigine	ers for the dura	tion of the pr	Jeci, Starting	when Lical ing i	abilication is ci	ompieted.					
	Labor B	OE-													
	NA														
5.3.2.1.3	,	Intervate I 40	al Oneret	ion into Dh	voice Dune			Wed 11/23/05	. 14	/ed 11/23/05	\$0.0	•	\$0.00	£0.00	\$0.00
5.3.2.1.3		Integrate L1C			•						•	U	\$0.00	\$0.00	\$0.00
	1D 12	Resource Name PhysicistU	Units 200%	Cost Base \$0.00	eline Cost Ac \$0.00	ct. Cost F \$0.00	Rem. Cost \$0.00	Work Ovt. Wor 0 h	k Baseline 0 h		rk Rem. Work	h			
	Notes	,		*****	*****	*****	******	•		•					
		efinition-		-											
	Milesto	ne - L1Cal Upgrade	"Sidewalk" s	system integrat	ted into Global P	hysics Runs	in Control Roo	om data from sy	stem flows to	L3 for offline study	y under control of	DAQ and	monitored by Cal	Muon shifters	
	M&S B	ne.													
	NA	JL													
	Labor B	OF													
	NA NA	OE-													
53214	1	Final Cal Noise	e Studies					Fri 3/10/06	<u> </u>	Mon 3/13/06	\$0.0	n	\$0.00	\$0.00	\$0.00
.5.3.2.1.4		Final Cal Noise		Cost Pass	olino Cost Ac	et Cost F	Pom Cost	Fri 3/10/06		Mon 3/13/06	\$0.0	0	\$0.00	\$0.00	\$0.00
.5.3.2.1.4	1D 11	Final Cal Noise Resource Name PhysicistF	e Studies Units	Cost Base \$0.00	eline Cost Ac	ct. Cost F \$0.00	Rem. Cost \$0.00	Work Ovt. Wor		Work Act. Wo	•		\$0.00	\$0.00	\$0.00
.5.3.2.1.4	1D 11	Resource Name	Units					Work Ovt. Wor	k Baseline	Work Act. Wo	rk Rem. Work		\$0.00	\$0.00	\$0.00
.5.3.2.1.4	1D 11 Notes WBS D	Resource Name PhysicistF efinition-	Units 200%	\$0.00	\$0.00	\$0.00	\$0.00	Work Ovt. Wor	k Baseline	Work Act. Wo	rk Rem. Work		\$0.00	\$0.00	\$0.00
.5.3.2.1.4	1D 11 Notes WBS D	Resource Name PhysicistF	Units 200%	\$0.00	\$0.00	\$0.00	\$0.00	Work Ovt. Wor	k Baseline	Work Act. Wo	rk Rem. Work		\$0.00	\$0.00	\$0.00
.5.3.2.1.4	1D 11 Notes WBS D	Resource Name PhysicistF efinition-sk completes the noi	Units 200%	\$0.00	\$0.00	\$0.00	\$0.00	Work Ovt. Wor	k Baseline	Work Act. Wo	rk Rem. Work		\$0.00	\$0.00	\$0.00
.5.3.2.1.4	ID 11 Notes WBS D This tas	Resource Name PhysicistF efinition-sk completes the noi	Units 200%	\$0.00	\$0.00	\$0.00	\$0.00	Work Ovt. Wor	k Baseline	Work Act. Wo	rk Rem. Work		\$0.00	\$0.00	\$0.00
.5.3.2.1.4	Notes WBS D This tas M&S BO NA	Resource Name PhysicistF efinition- sk completes the noi	Units 200%	\$0.00	\$0.00	\$0.00	\$0.00	Work Ovt. Wor	k Baseline	Work Act. Wo	rk Rem. Work		\$0.00	\$0.00	\$0.00
.5.3.2.1. ₄	ID 11 Notes WBS D This tas	Resource Name PhysicistF efinition- sk completes the noi	Units 200%	\$0.00	\$0.00	\$0.00	\$0.00	Work Ovt. Wor	k Baseline	Work Act. Wo	rk Rem. Work		\$0.00	\$0.00	\$0.00
.5.3.2.1.4	Notes WBS D This tas M&S BO NA	Resource Name PhysicistF efinition- sk completes the noi	Units 200%	\$0.00	\$0.00	\$0.00	\$0.00	Work Ovt. Wor	k Baseline	Work Act. Wo	rk Rem. Work		\$0.00	\$0.00	\$0.00
	Notes WBS D This tas M&S BG NA Labor B	Resource Name PhysicistF efinition- sk completes the noi	Units 200% ise studies ir	\$0.00 - In the Cal, prior	\$0.00 to and just after	\$0.00	\$0.00	Work Ovt. Wor	k Baseline 0 h	Work Act. Wo	rk Rem. Work	h	\$0.00	\$943.00	\$0.00 \$943.00
	Notes WBS D This tas M&S BG NA Labor B	Resource Name PhysicistF efinition- k completes the noi DE-	Units 200% ise studies ir	\$0.00 - n the Cal, prior n Trigger C	\$0.00 to and just after	\$0.00	\$0.00	Work Ovt. Wor 16 h	k Baseline	Work Act. Wo O h	rk Rem. Work 0 h 16	h h			
	ID 11 Notes WBS D This tas M&S BO NA Labor B	Resource Name PhysicistF efinition- k completes the noi DE- OE- Decable BLS of Resource Name PhysicistF	Units 200% ise studies ir cables fror Units 30%	\$0.00 The Cal, prior Trigger Ci Cost B \$0.00	\$0.00 to and just after rates asseline Cost \$0.00	\$0.00 the beam pi	\$0.00 pe is parted. Rem. Cost \$0.00	Work Ovt. Wor 16 h Mon 3/13/06 Work Ovt. W	k Baseline 0 h Solvork Basel 0 h	Work Act. Wo 0 h Mon 3/20/06 line Work Act. 1	rk Rem. Work O h 16 \$0.0 Work Rem. Wc	0 0 122 h			
	ID 11 Notes WBS D This tas M&S BO NA Labor B	Resource Name PhysicistF efinition- isk completes the noi DE- IOE- IOE- Resource Name PhysicistF PhysicistU	Units 200% ise studies ir cables fror Units 30% 400%	so.oo Trigger Ci Cost B \$0.00 \$0.00	\$0.00 to and just after rates aseline Cost \$0.00 \$0.00	\$0.00 the beam pi Act. Cost \$0.00 \$0.00	\$0.00 pe is parted. Rem. Cost \$0.00 \$0.00	Mon 3/13/06 Work Ovt. Work 12 h 160 h	k Baseline 0 h Nork Basel 0 h 0 h	Mon 3/20/06 line Work Act. I	## Rem. Work \$0.0	0 0 0 ork 12 h			
	ID 11 Notes WBS D This tas M&S BO NA Labor E ID 11 12 37 55	Resource Name PhysicistF efinition- ik completes the noi DE- IOE- IOE- Resource Name Physicist' Physicist' SeniorElecEngf Linda Bagby	Units 200% 200% ise studies ir 2ables fror Units 30% 400% 50% 30%	\$0.00 In the Cal, prior Trigger Ci Cost B. \$0.00 \$0.00 \$943.00 \$0.00	\$0.00 to and just after rates aseline Cost \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 the beam pi Act. Cost \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 pe is parted. Rem. Cost \$0.00 \$0.00 \$943.00 \$0.00	Mon 3/13/06 Work Ovt. W 12 h 16 h 20 h 12 h	k Baseline 0 h Nork Basel 0 h 0 h 0 h 0 h	Mon 3/20/06 line Work	## Rem. Work \$0.0	0 0 12 h 60 h 20 h			
	ID Notes WBS D This tas M&S B(NA Labor B D 11 12 37 55 72	Resource Name PhysicistF efinition- sk completes the noi DE-	Units 200% ise studies ir Cables fror Units 30% 400% 50% 30% 50%	\$0.00 In the Cal, prior Trigger Ci Cost B \$0.00 \$0.00 \$943.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 to and just after rates aseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 the beam pi	\$0.00 pe is parted. Rem. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Mon 3/13/06 Work Ovt. Wor 12 h 16 0 h 20 h 12 h 20 h	k Baseline 0 h Vork Basel 0 h 0 h 0 h 0 h 0 h	Work Act. Wo 0 h	## Rem. Work Son. Work Rem. Work Rem. Work Rem. Work Oh	0 ork 12 h 60 h 20 h 12 h			
	ID 111 Notes WBS D This tas M&S BO NA Labor B 111 12 37 55 72 75	Resource Name PhysicistF efinition- ik completes the noi DE- IOE- IOE- Resource Name Physicist' Physicist' SeniorElecEngf Linda Bagby	Units 200% 200% ise studies ir 2ables fror Units 30% 400% 50% 30%	\$0.00 In the Cal, prior Trigger Ci Cost B. \$0.00 \$0.00 \$943.00 \$0.00	\$0.00 to and just after rates aseline Cost \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 the beam pi	\$0.00 pe is parted. Rem. Cost \$0.00 \$0.00 \$943.00 \$0.00	Mon 3/13/06 Work Ovt. W 12 h 16 h 20 h 12 h	k Baseline 0 h Nork Basel 0 h 0 h 0 h 0 h	Mon 3/20/06 line Work	## Rem. Work Son. Work Rem. Work Rem. Work Rem. Work Oh	0 0 12 h 60 h 20 h			
	ID 11 Notes WBS D This tas M&S BC NA Labor B ID 11 12 37 55 72 75 Notes	Resource Name PhysicistF efinition- sk completes the noi DE-	Units 200% ise studies ir Cables fror Units 30% 400% 50% 30% 50%	\$0.00 In the Cal, prior Trigger Ci Cost B \$0.00 \$0.00 \$943.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 to and just after rates aseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 the beam pi	\$0.00 pe is parted. Rem. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Mon 3/13/06 Work Ovt. Wor 12 h 16 0 h 20 h 12 h 20 h	k Baseline 0 h Vork Basel 0 h 0 h 0 h 0 h 0 h	Work Act. Wo 0 h	## Rem. Work Son. Work Rem. Work Rem. Work Rem. Work Oh	0 ork 12 h 60 h 20 h 12 h			
	ID Notes WBS D This tas M&S B(NA Labor E 12 37 55 72 72 72 72 72 72 7	Resource Name PhysicistF efinition- k completes the noi DE- DE- DE- Resource Name PhysicistF PhysicistF PhysicistU SeniorElecEngF Linda Bagby John Anderson Alan Stone	Units 200% 200% ise studies in Units 30% 400% 400% 50% 100%	\$0.00 Trigger Ci S0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 to and just after rates aseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 the beam pi Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 Rem. Cost \$0.00 \$0.00 \$0.00 \$943.00 \$0.00 \$0.00 \$0.00	Mon 3/13/06 Work Ovt. Wor 12 h 120 h 120 h 120 h 40 h	k Baseline 0 h Vork Basel 0 h 0 h 0 h 0 h 0 h 0 h	Work Act. Wo 0 h	## Rem. Work Son. Work Rem. Work Rem. Work Rem. Work Oh	0 ork 12 h 60 h 20 h 12 h			
	ID Notes WBS D This tas M&S BO NA Labor B ID 11 12 37 75 72 76 Notes WBS D Decable	Resource Name PhysicistF efinition- k completes the noi DE-	Units 200% 200% ise studies in Units 30% 400% 400% 50% 100%	\$0.00 Trigger Ci S0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 to and just after rates aseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 the beam pi Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 Rem. Cost \$0.00 \$0.00 \$0.00 \$943.00 \$0.00 \$0.00 \$0.00	Mon 3/13/06 Work Ovt. Wor 12 h 120 h 120 h 120 h 40 h	k Baseline 0 h Vork Basel 0 h 0 h 0 h 0 h 0 h 0 h	Work Act. Wo 0 h	## Rem. Work Son. Work Rem. Work Rem. Work Rem. Work Oh	0 ork 12 h 60 h 20 h 12 h			
	ID Notes WBS D This tas M&S B(NA Labor E 12 37 55 72 72 72 72 72 72 7	Resource Name PhysicistF efinition- k completes the noi DE-	Units 200% 200% ise studies in Units 30% 400% 400% 50% 100%	\$0.00 Trigger Ci S0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 to and just after rates aseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 the beam pi Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 Rem. Cost \$0.00 \$0.00 \$0.00 \$943.00 \$0.00 \$0.00 \$0.00	Mon 3/13/06 Work Ovt. Wor 12 h 120 h 120 h 120 h 40 h	k Baseline 0 h Vork Basel 0 h 0 h 0 h 0 h 0 h 0 h	Work Act. Wo 0 h	## Rem. Work Son. Work Rem. Work Rem. Work Rem. Work Oh	0 ork 12 h 60 h 20 h 12 h			
.5.3.2.1.4	ID 111 Notes WBS D This tas M&S BC NA Labor B ID 111 12 37 55 72 75 Notes WBS D Decable M&S BC NA	Resource Name PhysicistF efinition- sk completes the noi DE- OE- Decable BLS of Resource Name PhysicistF PhysicistU SeniorElecEngF Linda Bagby John Anderson Alan Stone efinition- persent 1280 BLS DE-	Units 200% 200% ise studies in Units 30% 400% 400% 50% 100%	\$0.00 Trigger Ci S0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 to and just after rates aseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 the beam pi Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 Rem. Cost \$0.00 \$0.00 \$0.00 \$943.00 \$0.00 \$0.00 \$0.00	Mon 3/13/06 Work Ovt. Wor 12 h 120 h 120 h 120 h 40 h	k Baseline 0 h Vork Basel 0 h 0 h 0 h 0 h 0 h 0 h	Work Act. Wo 0 h	## Rem. Work Son. Work Rem. Work Rem. Work Rem. Work Oh	0 ork 12 h 60 h 20 h 12 h			
	ID 111 Notes WBS D This tas M&S BO NA Labor B ID 11 12 37 55 72 75 Notes WBS D Decable M&S BO NA Labor B	Resource Name PhysicistF efinition- ck completes the noi DE-	Units 200% ise studies ir Cables from Units 30% 400% 50% 100% cables from	\$0.00 In Trigger Ci Cost B. \$0.00 \$0.00 \$943.00 \$0.00 \$0.00 \$0.00 Cal Trig Racks	\$0.00 to and just after rates aseline Cost \$0.00	\$0.00 the beam pi Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00	\$0.00 De is parted. Rem. Cost \$0.00	Mon 3/13/06 Work Ovt. Work 12 h 160 h 20 h 12 h 40 h les aside in plastic	Nork Baseline O h O h O h O h O h O h O h C cableway.	Mon 3/20/06 line Work	\$0.0 Work Rem. Wo 0h 1 0h 1 0h 1 0h 0h 0h 0h	0 ork 12 h 60 h 12 h 12 h 20 h 40 h	\$0.00	\$943.00	\$943.00
	ID 111 Notes WBS D This tas M&S BO NA Labor B 10 111 12 37 75 72 75 Notes WBS D Decable M&S BO NA	Resource Name PhysicistF efinition- ck completes the noi DE-	Units 200% cables fror Units 30% 400% 50% 100% cables from	\$0.00 In the Cal, prior In Trigger Ci Cost B. \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 Cal Trig Rack:	so.oo to and just after rates saseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 the beam pi Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00	\$0.00 De is parted. Rem. Cost \$0.00	Mon 3/13/06 Work Ovt. Work 12 h 160 h 20 h 12 h 40 h les aside in plastic	Nork Baseline O h O h O h O h O h O h O h C cableway.	Mon 3/20/06 line Work	\$0.0 Work Rem. Wo 0h 1 0h 1 0h 1 0h 0h 0h 0h	0 ork 12 h 60 h 12 h 12 h 20 h 40 h	\$0.00	\$943.00	
	ID 111 Notes WBS D This tas M&S BO NA Labor B 10 111 12 37 75 72 75 Notes WBS D Decable M&S BO NA	Resource Name PhysicistF efinition- k completes the noi DE- DECABLE BLS OF Resource Name PhysicistF PhysicistU SeniorElecEngF Linda Bagby John Anderson Alan Stone efinition- persent 1280 BLS DE-	Units 200% cables fror Units 30% 400% 50% 100% cables from	\$0.00 In the Cal, prior In Trigger Ci Cost B. \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 Cal Trig Rack:	so.oo to and just after rates saseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 the beam pi Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00	\$0.00 De is parted. Rem. Cost \$0.00	Mon 3/13/06 Work Ovt. Work 12 h 160 h 20 h 12 h 40 h les aside in plastic	Nork Baseline O h O h O h O h O h O h O h C cableway.	Mon 3/20/06 line Work	\$0.0 Work Rem. Wo 0h 1 0h 1 0h 1 0h 0h 0h 0h	0 ork 12 h 60 h 12 h 12 h 20 h 40 h	\$0.00	\$943.00	\$943.00
	ID 111 Notes WBS D This tas M&S BO NA Labor B 10 111 12 37 75 72 75 Notes WBS D Decable M&S BO NA	Resource Name PhysicistF efinition- k completes the noi DE- DECABLE BLS OF Resource Name PhysicistF PhysicistU SeniorElecEngF Linda Bagby John Anderson Alan Stone efinition- persent 1280 BLS DE-	Units 200% cables fror Units 30% 400% 50% 100% cables from	\$0.00 In the Cal, prior In Trigger Ci Cost B. \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 Cal Trig Rack:	so.oo to and just after rates saseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 the beam pi Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00	\$0.00 De is parted. Rem. Cost \$0.00	Mon 3/13/06 Work Ovt. Work 12 h 160 h 20 h 12 h 40 h les aside in plastic	Nork Baseline O h O h O h O h O h O h O h C cableway.	Mon 3/20/06 line Work	\$0.0 Work Rem. Wo 0h 1 0h 1 0h 1 0h 0h 0h 0h	0 ork 12 h 60 h 12 h 12 h 20 h 40 h	\$0.00	\$943.00	\$943.00
	ID 111 Notes WBS D This tas M&S BO NA Labor B 111 12 37 55 72 75 Notes WBS D Decable M&S BO NA Labor B	Resource Name PhysicistF efinition- k completes the noi DE- DECABLE BLS OF Resource Name PhysicistF PhysicistU SeniorElecEngF Linda Bagby John Anderson Alan Stone efinition- persent 1280 BLS DE-	Units 200% Ise studies ir Cables fror Units 30% 400% 50% 100% cables from	\$0.00 In Trigger Ci Cost B \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 Cal Trig Rack:	\$0.00 to and just after rates aseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$s.00 \$s	\$0.00 the beam pi Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00	\$0.00 De is parted. Rem. Cost \$0.00	Mon 3/13/06 Work Ovt. Work 12 h 160 h 20 h 12 h 40 h les aside in plastic	Nork Baseline O h O h O h O h O h O h O h C cableway.	Mon 3/20/06 line Work	\$0.0 Work Rem. Wo 0h 1 0h 1 0h 1 0h 0h 0h 0h	0 ork 12 h 60 h 22 h 12 h 20 h 40 h	\$0.00	\$943.00	\$943.00

1.5.3.2.1.6		Depopulate and	remove	trigger crat	es		N	Mon 3/20	0/06	Mon 4/3/0	6	\$0.00	\$0.00	\$11,486.00	\$11,486.00
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work			
-	37	SeniorElecEngF	50%	\$1,886.00	\$0.00	\$0.00	\$1,886.00	40 h	0 h	0 h	0 h	40 h			
	38	SeniorElecTechF	400%	\$9,600.00	\$0.00	\$0.00	\$9,600.00	320 h	0 h	0 h	0 h	320 h			
	72	John Anderson	50%	\$0.00	\$0.00	\$0.00	\$0.00	40 h	0 h	0 h	0 h	40 h			
	100	Mike Cherry	100%	\$0.00	\$0.00	\$0.00	\$0.00	80 h	0 h	0 h	0 h	80 h			
	101	Bruce Merkel	100%	\$0.00	\$0.00	\$0.00	\$0.00	80 h	0 h	0 h	0 h	80 h			
	102	Victor Martinez	100%	\$0.00	\$0.00	\$0.00	\$0.00	80 h	0 h	0 h	0 h	80 h			
	103	Ben Abraham	100%	\$0.00	\$0.00	\$0.00	\$0.00	80 h	0 h	0 h	0 h	80 h			

WBS M&S EQ M&S Labor Name Start Finish **FNAL Labor Total Cost**

"Depopulate and remove trigger crates" continued

Notes WBS Definition-

This task removes boards from trigger crates after BLS cables removed, then removes crates from racks. The crates need not be recovered for service after removal. Power supplies and heat exchangers in the racks will also be removed during this task. Existing airflow ductwork at the top of the racks will likely not need to be removed.

M&S BOE-

Labor BOE-

Detailed estimate by A. Stone. Two persons working as a team can depopulate and remove crates in 1 rack per day. Two teams can fit in MCH1. Elapsed time: 10 days.

1.5.3.2.1.7		Install Rack Infra	astructure	in active ra	cks		Мс	n 3/27/0	6	Mon 4/17/06	\$1,00	0.00	\$0.00	\$21,092.10	\$22,092.10
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work			
-	37	SeniorElecEngF	100%	\$5,658.00	\$0.00	\$0.00	\$5,658.00	120 h	0 h	0 h	0 h	120 h			
	38	SeniorElecTechF	400%	\$14,400.00	\$0.00	\$0.00	\$14,400.00	480 h	0 h	0 h	0 h	480 h			
	40	SeniorMechTechF	30%	\$1,034.10	\$0.00	\$0.00	\$1,034.10	36 h	0 h	0 h	0 h	36 h			
	48	MandS	1,000	\$1,000.00	\$0.00	\$0.00	\$1,000.00	1,000		0	0	1,000			
	69	John Fogelsong	50%	\$0.00	\$0.00	\$0.00	\$0.00	60 h	0 h	0 h	0 h	60 h			
	72	John Anderson	50%	\$0.00	\$0.00	\$0.00	\$0.00	60 h	0 h	0 h	0 h	60 h			
	100	Mike Cherry	100%	\$0.00	\$0.00	\$0.00	\$0.00	120 h	0 h	0 h	0 h	120 h			
	101	Bruce Merkel	100%	\$0.00	\$0.00	\$0.00	\$0.00	120 h	0 h	0 h	0 h	120 h			
	102	Victor Martinez	100%	\$0.00	\$0.00	\$0.00	\$0.00	120 h	0 h	0 h	0 h	120 h			
	103	Ben Abraham	100%	\$0.00	\$0.00	\$0.00	\$0.00	120 h	0 h	0 h	0 h	120 h			

Notes WBS Definition-

This involves outfitting 4 of the existing racks with water supply, heat exchangers, air blowers, 1553's, RMI's, smoke and drip detectors, Pulizzi boxes (all items taken from existing spares or new units). Duct work on top of racks is involved.

Estimate \$200 per rack additional small parts required.

Experience installing racks for Run1 forms the basis of estimate. Four persons can complete the four racks in one week.

1.5.3.2.1.8		Install Patch Pa	anels in Pa	assive Racl	ks, reconnect E	BLS cables	N	/lon 4/17	7/06	Mon 4/24/0	6	\$0.00	\$0.00	\$4,286.00	\$4,286.00
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work			
_	11	PhysicistF	50%	\$0.00	\$0.00	\$0.00	\$0.00	20 h	0 h	0 h	0 h	20 h			
	12	PhysicistU	200%	\$0.00	\$0.00	\$0.00	\$0.00	80 h	0 h	0 h	0 h	80 h			
	37	SeniorElecEngF	100%	\$1,886.00	\$0.00	\$0.00	\$1,886.00	40 h	0 h	0 h	0 h	40 h			
	38	SeniorElecTechF	200%	\$2,400.00	\$0.00	\$0.00	\$2,400.00	80 h	0 h	0 h	0 h	80 h			
	55	Linda Bagby	50%	\$0.00	\$0.00	\$0.00	\$0.00	20 h	0 h	0 h	0 h	20 h			
	69	John Fogelsong	50%	\$0.00	\$0.00	\$0.00	\$0.00	20 h	0 h	0 h	0 h	20 h			
	72	John Anderson	50%	\$0.00	\$0.00	\$0.00	\$0.00	20 h	0 h	0 h	0 h	20 h			
	75	Alan Stone	100%	\$0.00	\$0.00	\$0.00	\$0.00	40 h	0 h	0 h	0 h	40 h			
	101	Bruce Merkel	100%	\$0.00	\$0.00	\$0.00	\$0.00	40 h	0 h	0 h	0 h	40 h			
	102	Victor Martinez	100%	\$0.00	\$0.00	\$0.00	\$0.00	40 h	0 h	0 h	0 h	40 h			

Notes

WBS Definition-

Installs 32 BLS patch panels in racks (techs), reconnect 1280 BLS cables(physicists).

M&S BOE-

NA

Estimate by A. Stone based on mockup work on sidewalk: one person can do 1 rack per day (128 cables), 10 racks involved.

1.5.3.2.1.9		Install ADF, TA	B/GAB, R	eadout, Co	ntroller Crates	3	ı	Mon 4/17	7/06	Mon 5/1/06	3	\$0.00	\$0.00	\$8,572.00	\$8,572.00	
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work	Rem. Work				
-	12	PhysicistU	100%	\$0.00	\$0.00	\$0.00	\$0.00	80 h	0 h	0 h	0 h	80 h				
	37	SeniorElecEngF	100%	\$3,772.00	\$0.00	\$0.00	\$3,772.00	80 h	0 h	0 h	0 h	80 h				
	38	SeniorElecTechF	200%	\$4,800.00	\$0.00	\$0.00	\$4,800.00	160 h	0 h	0 h	0 h	160 h				
	69	John Fogelsong	50%	\$0.00	\$0.00	\$0.00	\$0.00	40 h	0 h	0 h	0 h	40 h				
	72	John Anderson	50%	\$0.00	\$0.00	\$0.00	\$0.00	40 h	0 h	0 h	0 h	40 h				
	75	Alan Stone	100%	\$0.00	\$0.00	\$0.00	\$0.00	80 h	0 h	0 h	0 h	80 h				
	103	Ben Abraham	100%	\$0.00	\$0.00	\$0.00	\$0.00	80 h	0 h	0 h	0 h	80 h				
	104	Joshua Moua	100%	\$0.00	\$0.00	\$0.00	\$0.00	80 h	0 h	0 h	0 h	80 h				

Remove four TT crates from sidewalk racks, transport to MCH1, install in MCH1 racks. Ditto for TAB/GAB, readout, and controller crates. Includes TAB/GAB powersupply.

M&S BOE-

NA

M&S EQ WBS Name Start Finish M&S Labor FNAL Labor **Total Cost** "Install ADF, TAB/GAB, Readout, Controller Crates" continued Notes Labor BOE-A. Stone estimate: two technicians will do 1 crate per day. 1.5.3.2.1.10 Connect Pleated Foil Cables Wed 4/19/06 Fri 4/28/06 \$0.00 \$0.00 \$2,640.40 \$2,640.40 Rem. Work Resource Name Units Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Physicisti \$0.00 \$0.00 \$0.00 \$0.00 28 h 28 h 112 h 12 37 55 75 PhysicistU 200% \$0.00 \$0.00 \$0.00 \$0.00 112 h 0 h 0 h 0 h SeniorFlecFnaF 100% \$2,640,40 \$0.00 \$0.00 \$2,640,40 56 h 0 h 0 h 0 h 56 h 50% \$0.00 \$0.00 28 h 0 h 0 h 28 h Linda Bagby \$0.00 \$0.00 0 h Alan Stone 100% \$0.00 \$0.00 \$0.00 \$0.00 56 h 0 h 0 h 0 h 56 h Johnny Green 100% \$0.00 \$0.00 \$0.00 \$0.00 56 h 0 h 0 h WBS Definition-Labael and connect pleated foil cables (40 per TT crate) from BLS patch panels. M&S BOE-Labor BOE-Taken from cabling of the L2muon trigger system; one person can do 20 per day. 1.5.3.2.1.11 \$0.00 Connect ADF -- TAB/GAB and TFW cables Mon 5/1/06 Wed 5/3/06 \$0.00 \$0.00 \$0.00 Resource Name Ovt. Work Act. Work Rem. Work ID Units Cost Baseline Cost Act. Cost Rem. Cost Work Baseline Work 11 12 PhysicistF 100% \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 16 h 0 h 0 h 0 h 0 h 0 h 16 h PhysicistU 200% \$0.00 \$0.00 \$0.00 32 h 0 h 32 h 55 Linda Bagby 100% \$0.00 \$0.00 \$0.00 \$0.00 16 h 0 h 0 h 0 h 16 h 75 Alan Stone 100% \$0.00 \$0.00 \$0.00 \$0.00 16 h 0 h 0 h 0 h 16 h Connect the 61 cables per ADF (3x20 LVDS + 1), controller and readout cables. M&S BOE-NA Labor BOE-Estimate 1 person can cable one ADF crate per day. 1.5.3.2.1.12 L1 Cal Ready for Technical Commissioning Wed 5/3/06 Wed 5/3/06 \$0.00 \$0.00 \$0.00 \$0.00 Notes WBS Definition-Milestone- All L1 Cal components are installed in MCH1. 1.5.3.2.1.13 Technical commissioning in MCH1-UIC & CU Wed 5/3/06 Wed 5/24/06 \$0.00 \$0.00 \$0.00 \$0.00 ID Resource Name I Inits Cost Raseline Cost Act. Cost Rem. Cost Work Ovt. Work Raseline Work Act Work Rem. Work 12 PhysicistU 300% \$0.00 \$0.00 \$0.00 \$0.00 360 h 0 h 0 h 0 h 360 h 96 Sabaine Lammers 100% \$0.00 \$0.00 \$0.00 \$0.00 120 h 0 h 0 h 0 h 120 h Notes WBS Definition-Operate full system in MCH1, verify cabling, check L1, L2, L3 data, calibrate the Trigger Towers, compare TT and precision readout, develop final ADF coefficients, study debug triggers. Because all racks have been operated in the DAB1 test area, possible malfunction due to the relocation to the MCH1 einvironment is not likely. Tevatron collisions assumed for at least part of period, but operation with cosmics, pulsers also likely. M&S BOE-Estimated by people who built existing cal L1. As university/FNAL division of labor becomes defined, specific personnel and Universities will be identified. 1.5.3.2.1.14 Technical commissioning in MCH1-FNAL Wed 5/3/06 Wed 5/24/06 \$0.00 \$0.00 \$0.00 \$0.00 Baseline Work Resource Name Cost Baseline Cost Act. Cost Work Ovt. Work Act. Work Rem. Work \$0.00 \$0.00 360 h 360 h 11 PhysicistF 1 4 1 300% \$0.00 \$0.00 0 h 0 h 0 h 55 Linda Bagby 100% \$0.00 \$0.00 \$0.00 \$0.00 120 h 0 h 0 h 0 h 120 h Notes

Operate full system in MCH1, verify cabling, check L1, L2, L3 data, calibrate the Trigger Towers, compare TT and precision readout, develop final ADF coefficients, study debug triggers. Because all racks have been operated in the DAB1 test area, possible malfunction due to the relocation to the MCH1 einvironment is not likely. Tevatron collisions assumed for at least part of period, but operation with cosmics, pulsers also likely

M&S BOE-

NA

Technical i	Name	Start	Finish	M&S EQ	M&S Labor	FNAL Labor	Total Cost
00111110011	commissioning in MCH1-FNAL" continued						
	Notes						
	Labor BOE- Estimated by people who built existing cal L1. As university/FNAL division of labor becomes	defined, specific personnel	and Universities will be iden	tified.			
	Estimated by people time ball esteaming and E117 to all relating the annual of table becomes	domica, opcomo percormor					
50044	5 Level 4 Cel Trimer levielled 8 Technical Commissioning (T 0/0/00	T 0/0/00	* 0.00	***	* 0.00	* 0.00
5.3.2.1.15	5 Level 1 Cal Trigger Installed & Technical Commissioning (Notes	Tue 6/6/06	Tue 6/6/06	\$0.00	\$0.00	\$0.00	\$0.00
	WBS Definition-						
	Milestone-The level 1 calorimeter trigger has been installed and technically commissioned, s	so that it is ready for beam in	the detector.				
5.3.3	Level 1 Calorimeter Track Matching	Thu 9/15/05	Thu 6/8/06	\$2,000.00	\$0.00	\$0.00	\$2,000.00
	Notes WBS Definition-						
	This summary element provides for improvements in the Run2a track-matching trigger. It incomes	cludes development and prod	urement of slightly modified	versions of existing	Level 1 muon cards, a	and procurement of relat	ed cabling, connectors, readout
	processors, and power supplies.						
5.3.3.1	L1 Cal/Track Match Production and Testing Completed	Thu 9/15/05	Thu 9/15/05	\$0.00	\$0.00	\$0.00	\$0.00
	Notes WBS Definition-						
	Milestone-All production and testing for the cal/track match has been done.						
5.3.3.2	L1 Cal/Trk Match Installation	Thu 9/15/05	Wed 10/12/05	\$0.00	\$0.00	\$0.00	\$0.00
	Notes						
	WBS Definition- This summary task describes the installation of the complete cal-track matching system in the	e experiment.					
		TI 0/45/05	111 1 10/10/05	40.00			A
5.3.3.2.1		Thu 9/15/05	Wed 10/12/05	\$0.00	\$0.00	\$0.00	\$0.00
	ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost 12 PhysicistU 100% \$0.00 \$0.00 \$0.00 \$0.00	Work Ovt. Work 160 h 0 h	Baseline Work Act. Work 0 h 0	Rem. Work h 160 h			
	Notes						
	WBS Definition- Install MTCxx, MTFB, and MTCM in crate and connect cables (need ~30 cables from L1Cal	tria and I 10al trle) and do fi	al aphla dragging Work to	ha aamalatad ariar t	o Dunllh abutdawa		
	install WTOXX, WTT B, and WTOW IT trate and connect cables (need ~50 cables from ETCal	ing and Litear lik) and do in					
			Ü	be completed phor t	o ramo snataown.		
	Labor BOE- Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% l	FTE each.	Ÿ	be completed phore	o realing shataown.		
	Labor BOE- Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% l	FTE each.	Ü	be completed prior t	o ramino shataown.		
	Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% l					\$0.00	\$0.00
	Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% L1 Cal/Track Match Installed in MCH	Wed 10/12/05	Wed 10/12/05	\$0.00	\$0.00	\$0.00	\$0.00
5.3.3.2.2	Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% I L1 Cal/Track Match Installed in MCH Notes WBS Definition-					\$0.00	\$0.00
5.3.3.2.2	Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% I L1 Cal/Track Match Installed in MCH Notes					\$0.00	\$0.00
5.3.3.2.2	Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% L1 Cal/Track Match Installed in MCH Notes WBS Definition- Milestone-MCH portion of CTM installed. L1 Cal/Trk Match Technical Commissioning					\$0.00 \$0.00	\$0.00 \$2,000.00
5.3.3.2.2 5.3.3.3	Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% I L1 Cal/Track Match Installed in MCH Notes WBS Definition- Milestone-MCH portion of CTM installed. L1 Cal/Trk Match Technical Commissioning Notes	Wed 10/12/05	Wed 10/12/05	\$0.00	\$0.00		
5.3.3.2.2	Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% L1 Cal/Track Match Installed in MCH Notes WBS Definition- Milestone-MCH portion of CTM installed. L1 Cal/Trk Match Technical Commissioning Notes WBS Definition- This summary task describes the technical commissioning of the cal-track matching system in the cal-track m	Wed 10/12/05 Thu 10/13/05	Wed 10/12/05 Thu 6/8/06	\$0.00 \$2,000.00	\$0.00 \$0.00	\$0.00	\$2,000.00
5.3.3.2.2	Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% I L1 Cal/Track Match Installed in MCH Notes WBS Definition- Milestone-MCH portion of CTM installed. L1 Cal/Trk Match Technical Commissioning Notes WBS Definition-	Wed 10/12/05 Thu 10/13/05	Wed 10/12/05 Thu 6/8/06	\$0.00 \$2,000.00	\$0.00 \$0.00	\$0.00	\$2,000.00
5.3.3.2.2 5.3.3.3	Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% La Cal/Track Match Installed in MCH Notes WBS Definition- Milestone-MCH portion of CTM installed. L1 Cal/Trk Match Technical Commissioning Notes WBS Definition- This summary task describes the technical commissioning of the cal-track matching system in available.	Wed 10/12/05 Thu 10/13/05 In the experiment. It begins	Wed 10/12/05 Thu 6/8/06 shortly after the run resume	\$0.00 \$2,000.00 s using muon trigger	\$0.00 \$0.00 or cards after the 2004 st	\$0.00 shutdown, and continues	\$2,000.00 until production L1Caltrk cards
5.3.3.2.2	Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% L1 Cal/Track Match Installed in MCH Notes WBS Definition- Milestone-MCH portion of CTM installed. L1 Cal/Trk Match Technical Commissioning Notes WBS Definition- This summary task describes the technical commissioning of the cal-track matching system in available. Debug timing and trigger signals from the TFW	Wed 10/12/05 Thu 10/13/05 In the experiment. It begins Thu 10/13/05	Wed 10/12/05 Thu 6/8/06 shortly after the run resume Wed 10/26/05	\$0.00 \$2,000.00 s using muon trigger	\$0.00 \$0.00	\$0.00	\$2,000.00
5.3.3.2.2	Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% L1 Cal/Track Match Installed in MCH Notes WBS Definition- Milestone-MCH portion of CTM installed. L1 Cal/Trk Match Technical Commissioning Notes WBS Definition- This summary task describes the technical commissioning of the cal-track matching system in available. Debug timing and trigger signals from the TFW	Wed 10/12/05 Thu 10/13/05 In the experiment. It begins Thu 10/13/05 Work Ovt. Work	Wed 10/12/05 Thu 6/8/06 shortly after the run resume	\$0.00 \$2,000.00 s using muon trigger \$0.00 Rem. Work	\$0.00 \$0.00 or cards after the 2004 st	\$0.00 shutdown, and continues	\$2,000.00 until production L1Caltrk cards
5.3.3.2.2 5.3.3.3 5.3.3.3	Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% I L1 Cal/Track Match Installed in MCH Notes WBS Definition- Milestone-MCH portion of CTM installed. L1 Cal/Trk Match Technical Commissioning Notes WBS Definition- This summary task describes the technical commissioning of the cal-track matching system is available. Debug timing and trigger signals from the TFW ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost 12 PhysicistU 200% \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Wed 10/12/05 Thu 10/13/05 In the experiment. It begins Thu 10/13/05 Work Ovt. Work	Wed 10/12/05 Thu 6/8/06 shortly after the run resume Wed 10/26/05 Baseline Work Act. Work	\$0.00 \$2,000.00 s using muon trigge \$0.00 Rem. Work	\$0.00 \$0.00 or cards after the 2004 st	\$0.00 shutdown, and continues	\$2,000.00 until production L1Caltrk cards
5.3.3.2.2 5.3.3.3 5.3.3.3	Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% I L1 Cal/Track Match Installed in MCH Notes WBS Definition- Milestone-MCH portion of CTM installed. L1 Cal/Trk Match Technical Commissioning Notes WBS Definition- This summary task describes the technical commissioning of the cal-track matching system is available. Debug timing and trigger signals from the TFW ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost 12 PhysicistU 200% \$0.00 \$0.00 \$0.00 \$0.00 Notes WBS definition -	Wed 10/12/05 Thu 10/13/05 In the experiment. It begins Thu 10/13/05 Work Ovt. Work 160 h 0 h	Wed 10/12/05 Thu 6/8/06 shortly after the run resume Wed 10/26/05 Baseline Work Act. Work 0 h 0	\$0.00 \$2,000.00 s using muon trigger \$0.00 Rem. Work h 160 h	\$0.00 \$0.00 or cards after the 2004 st	\$0.00 shutdown, and continues	\$2,000.00 until production L1Caltrk cards
5.3.3.2.2 5.3.3.3 5.3.3.3	Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% I L1 Cal/Track Match Installed in MCH Notes WBS Definition- Milestone-MCH portion of CTM installed. L1 Cal/Trk Match Technical Commissioning Notes WBS Definition- This summary task describes the technical commissioning of the cal-track matching system is available. Debug timing and trigger signals from the TFW ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost 12 PhysicistU 200% \$0.00 \$0.00 \$0.00 \$0.00 Notes WBS definition - Verify that the cal-trk trigger is receiving proper timing (BOT) and trigger signals from the trig	Wed 10/12/05 Thu 10/13/05 In the experiment. It begins Thu 10/13/05 Work Ovt. Work 160 h 0 h	Wed 10/12/05 Thu 6/8/06 shortly after the run resume Wed 10/26/05 Baseline Work Act. Work 0 h 0	\$0.00 \$2,000.00 s using muon trigger \$0.00 Rem. Work h 160 h	\$0.00 \$0.00 or cards after the 2004 st	\$0.00 shutdown, and continues	\$2,000.00 until production L1Caltrk cards
5.3.3.2.2 5.3.3.3 5.3.3.3.1	Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% I L1 Cal/Track Match Installed in MCH Notes WBS Definition- Milestone-MCH portion of CTM installed. L1 Cal/Trk Match Technical Commissioning Notes WBS Definition- This summary task describes the technical commissioning of the cal-track matching system is available. Debug timing and trigger signals from the TFW ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost 12 PhysicistU 200% \$0.00 \$0.00 \$0.00 \$0.00 Notes WBS definition -	Wed 10/12/05 Thu 10/13/05 In the experiment. It begins Thu 10/13/05 Work Ovt. Work 160 h 0 h	Wed 10/12/05 Thu 6/8/06 shortly after the run resume Wed 10/26/05 Baseline Work Act. Work 0 h 0	\$0.00 \$2,000.00 s using muon trigger \$0.00 Rem. Work h 160 h	\$0.00 \$0.00 or cards after the 2004 st	\$0.00 shutdown, and continues	\$2,000.00 until production L1Caltrk cards
5.3.3.2.2 5.3.3.3 5.3.3.3.1	Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% I L1 Cal/Track Match Installed in MCH Notes WBS Definition- Milestone-MCH portion of CTM installed. L1 Cal/Trk Match Technical Commissioning Notes WBS Definition- This summary task describes the technical commissioning of the cal-track matching system i available. Debug timing and trigger signals from the TFW ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost 12 PhysicistU 200% \$0.00 \$0	Wed 10/12/05 Thu 10/13/05 In the experiment. It begins Thu 10/13/05 Work Ovt. Work 160 h 0 h	Wed 10/12/05 Thu 6/8/06 shortly after the run resume Wed 10/26/05 Baseline Work Act. Work 0 h 0	\$0.00 \$2,000.00 s using muon trigger \$0.00 Rem. Work h 160 h	\$0.00 \$0.00 or cards after the 2004 st	\$0.00 shutdown, and continues	\$2,000.00 until production L1Caltrk cards
5.3.3.2.2 5.3.3.3	Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% I L1 Cal/Track Match Installed in MCH Notes WBS Definition- Milestone-MCH portion of CTM installed. L1 Cal/Trk Match Technical Commissioning Notes WBS Definition- This summary task describes the technical commissioning of the cal-track matching system is available. Debug timing and trigger signals from the TFW ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost 12 PhysicistU 200% \$0.00 \$0.00 \$0.00 \$0.00 Notes WBS definition - Verify that the cal-trik trigger is receiving proper timing (BOT) and trigger signals from the trig M&S BOE - No M&S associated with this task Labor BOE -	Wed 10/12/05 Thu 10/13/05 In the experiment. It begins Thu 10/13/05 Work Ovt. Work 160 h Ger framework. Production of	Wed 10/12/05 Thu 6/8/06 shortly after the run resume Wed 10/26/05 Baseline Work Act. Work 0 h 0 rate managers will be on ha	\$0.00 \$2,000.00 s using muon trigger \$0.00 Rem. Work h 160 h nd early 2005.	\$0.00 \$0.00 r cards after the 2004 s \$0.00	\$0.00 shutdown, and continues \$0.00	\$2,000.00 until production L1Caltrk cards \$0.00
i.3.3.2.2 i.3.3.3	Experience installing Level 1 muon trigger cards in Run 2a. Assumes two physicists at 50% I L1 Cal/Track Match Installed in MCH Notes WBS Definition- Milestone-MCH portion of CTM installed. L1 Cal/Trk Match Technical Commissioning Notes WBS Definition- This summary task describes the technical commissioning of the cal-track matching system is available. Debug timing and trigger signals from the TFW ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost 12 PhysicistU 200% \$0.00 \$	Wed 10/12/05 Thu 10/13/05 In the experiment. It begins Thu 10/13/05 Work Ovt. Work 160 h Ger framework. Production of	Wed 10/12/05 Thu 6/8/06 shortly after the run resume Wed 10/26/05 Baseline Work Act. Work 0 h 0 rate managers will be on ha	\$0.00 \$2,000.00 s using muon trigger \$0.00 Rem. Work h 160 h nd early 2005.	\$0.00 \$0.00 r cards after the 2004 s \$0.00	\$0.00 shutdown, and continues \$0.00	\$2,000.00 until production L1Caltrk cards \$0.00

BS	Name							Start		inish	M&S EQ	M&S Labor	FNAL Labor	Total Cost	
5.3.3.3.2		, L3 readout					Thu 10/2		Wed 11/2		\$0.00	\$0.00	\$0.00	\$0.00	
_	ID Resource Name 12 PhysicistU		Cost Baseli \$0.00	line Cost Ac \$0.00	t. Cost Re \$0.00	em. Cost \$0.00	Work 0	vt. Work I	Baseline Work 0 h	Act. Work 0 h	Rem. Work 160 h				
	Notes	10078	φυ.υυ	φο.σο	φ0.00	φυ.υυ	10011	011	011	011	100 11				
W	WBS Definition-														
R	Record data sent to L2 a	nd L3 and verify	format.												
u	done before shutdown!														
	M&S BOE-														
IN.	NA														
	Labor BOE- Runlla experience estab	liahina raadaut a	of I O and I O da	ata fram Laval /	l muon triano	rı 1 nhusisist	full time for a	n month							
K	runna expenence estab	isning readout of	ii L2 and L3 da	.ta ilolli Level i	muon myyer	I priysicist	Tull tille for a	i ilioliul.							
I															
											•				
3.3.3.3	Make L1 late	ency change					Wed 3			3/06	\$2,000.00	\$0.00	\$0.00	\$2,000.00	
_	ID Resource Name 44 SeniorElecEngU	Units 100%	Cost B \$0.00	Baseline Cost \$0.00	Act. Cost \$0.00	Rem. Cost \$0.00	Work 0 20 h	Ovt. Work 0 h	Baseline Work	Act. Wo	ork Rem. Work 0 h 20 h	_			
	48 MandS	2,000	\$2,000.00	\$0.00	\$0.00	\$2,000.00	2,000			0	0 2,000				
	77 Dan Edmunds	100%	\$0.00	\$0.00	\$0.00	\$0.00	0 20 h	0 h	(h	0 h 20 h				
	Notes NBS Definition-														
	nstall L1 total latency ch	ange in TFW													
M	M&S BOE-														
	NA														
	_abor BOE-														
	Runlla experience; Dan	Edmunds. Estim	nate \$2000.												
3.3.3.4	Debug CTM	decision to T	:FW				Fri 3	/3/06	Fri 3/	0/06	\$0.00	\$0.00	\$0.00	\$0.00	
	ID Resource Name								Baseline Work	Act. Work	Rem. Work				
	12 PhysicistU	100%	\$0.00	\$0.00	\$0.00	\$0.00	40 h	0 h	0 h	0 h	40 h				
	Notes NBS Definition-														
V	erify timing of cal-track	match is correct	at the trigger f	ramework.											
Ol	old "decisions" being do	e now.													
	M&S BOE-														
N.	NA														
La	_abor BOE-														
R															
	Runlla experience verify	ing Level 1 muo	n trigger decisi	ions: 1 week fc	r a physicist.										
3.3.3.5	Runlla experience verify	ring Level 1 muor					Wed 5/2	24/06	Wed 5/2	4/06	\$0.00	\$0.00	\$0.00	\$0.00	
_	Runlla experience verify L1 CTM Re						Wed 5/2	?4/06	Wed 5/2	4/06	\$0.00	\$0.00	\$0.00	\$0.00	
W	L1 CTM Res	ady for Final	Technical (Commissio			Wed 5/2	24/06	Wed 5/2	4/06	\$0.00	\$0.00	\$0.00	\$0.00	
W M	L1 CTM Rea Notes WBS Definition- Wilestone-L1CTM ready	for final Technica	Technical (Commissio											
W M 3.3.3.6	L1 CTM Res Notes NBS Definition- Milestone-L1CTM ready Debug input	for final Technica	Technical (Commissioning.	oning		Wed 5/2	24/06	Thu 6	8/06	\$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	
M M 3.3.3.6	Runlla experience verify L1 CTM Rei Notes WBS Definition- Milestone-L1CTM ready Debug input ID Resource Name	for final Technical	Technical (real Commission rces Cost Baseli	Commissioning.	ening	em. Cost	Wed 5/2	24/06 vt. Work	Thu 6	8/06 Act. Work	\$0.00 Rem. Work				
3.3.3.6	Runlla experience verification in the control of th	for final Technical	Technical (Commissioning.	oning	em. Cost \$0.00	Wed 5/2	24/06	Thu 6	8/06	\$0.00 Rem. Work				
3.3.3.6 —	Runlla experience verifications L1 CTM Resilvation Notes WBS Definition- Milestone-L1CTM ready Debug input Resource Name 12 PhysicistU Notes WBS Definition-	for final Technica from all source Units C 200%	Technical (real Commission rces Cost Baseli	Commissioning.	ening		Wed 5/2	24/06 vt. Work	Thu 6	8/06 Act. Work	\$0.00 Rem. Work				
3.3.3.6 —	Runlla experience verification L1 CTM Res Notes Notes Definition- Milestone-L1CTM ready Debug input ID Resource Name 12 PhysicistU Notes WBS Definition- Verify inputs from CTT, verify inputs from CTT, verification	for final Technica for final Technica from all source Units C 200%	rechnical (cal Commission reces Cost Baseli \$0.00	Commissioning.	ening at Cost Re \$0.00	\$0.00	Wed 5/2	24/06 vt. Work	Thu 6	8/06 Act. Work	\$0.00 Rem. Work				
3.3.3.6 	Runlla experience verifications L1 CTM Resilvation Notes WBS Definition- Milestone-L1CTM ready Debug input Resource Name 12 PhysicistU Notes WBS Definition-	for final Technica for final Technica from all source Units C 200% cal-L1 d cal-L1 being re	rechnical (cal Commission reces Cost Baseli \$0.00	Commissioning.	ening at Cost Re \$0.00	\$0.00	Wed 5/2	24/06 vt. Work	Thu 6	8/06 Act. Work	\$0.00 Rem. Work				
3.3.3.6 	Runlla experience verifications and the second of the seco	for final Technica for final Technica from all source Units C 200% cal-L1 d cal-L1 being re	rechnical (cal Commission reces Cost Baseli \$0.00	Commissioning.	ening at Cost Re \$0.00	\$0.00	Wed 5/2	24/06 vt. Work	Thu 6	8/06 Act. Work	\$0.00 Rem. Work				
3.3.3.6 — W V V V da M	Runlla experience verification L1 CTM Res Notes NBS Definition- Milestone-L1CTM ready Debug input ID Resource Name 12 PhysicistU Notes NBS Definition- Verify inputs from CTT, conder-relies on CTT ard at a quality not critical, j	for final Technica for final Technica from all source Units C 200% cal-L1 d cal-L1 being re	rechnical (cal Commission reces Cost Baseli \$0.00	Commissioning.	ening at Cost Re \$0.00	\$0.00	Wed 5/2	24/06 vt. Work	Thu 6	8/06 Act. Work	\$0.00 Rem. Work				
3.3.3.6 	Runlla experience verifications and the second seco	for final Technica for final Technica from all source Units C 200% cal-L1 d cal-L1 being re	rechnical (cal Commission reces Cost Baseli \$0.00	Commissioning.	ening at Cost Re \$0.00	\$0.00	Wed 5/2	24/06 vt. Work	Thu 6	8/06 Act. Work	\$0.00 Rem. Work				
3.3.3.6 — WW MM	Runlla experience verifications and the second seco	for final Technica for final Technica from all source Units C 200%	rechnical of the control of the cont	Commissioning. line Cost Ac \$0.00	et. Cost Re \$0.00	\$0.00	Wed 5/2 Work 0 160 h	24/06 vt. Work 0 h	Thu 6	8/06 Act. Work	\$0.00 Rem. Work				
3.3.3.6 — W.V. * da M.N. L.A. R.	Runlla experience verification L1 CTM Resilves Nos Definition- Milestone-L1CTM ready Debug input ID Resource Name 12 PhysicistU Notes WBS Definition- Verify inputs from CTT, rote - relies on CTT ardata quality not critical, j M&S BOE- NA abor BOE- Runlla muon Level 1 ex	for final Technica for final Technica from all source Units C 200% sal-L1 d cal-L1 being re ust so it comes.	rechnical of the control of the cont	Commissioning. line Cost Ac \$0.00 utputs need a	it. Cost Re \$0.00 at least 1/8 of ds and CTT:	\$0.00 Cal L1.	Wed 5/2 Work 0 160 h	24/06 vt. Work 0 h	Thu 6 Baseline Work 0 h	8/06 Act. Work 0 h	\$0.00 Rem. Work 160 h	\$0.00	\$0.00	\$0.00	
3.3.3.6	Runlla experience verification L1 CTM Resilves Nos Definition- Milestone-L1CTM ready Debug input ID Resource Name 12 PhysicistU Notes NBS Definition- Verify inputs from CTT, rote - relies on CTT ardata quality not critical, j M&S BOE- NA abor BOE- Runlla muon Level 1 ext Level 1 Cal.	for final Technica for final Technica from all source Units C 200%	rechnical of the control of the cont	Commissioning. line Cost Ac \$0.00 utputs need a	it. Cost Re \$0.00 at least 1/8 of ds and CTT:	\$0.00 Cal L1.	Wed 5/2 Work 0 160 h	24/06 vt. Work 0 h	Thu 6	8/06 Act. Work 0 h	\$0.00 Rem. Work				
MM M M M M M M M M M M M M M M M M M M	Runlla experience verification L1 CTM Resilves Nos Definition- Milestone-L1CTM ready Debug input ID Resource Name 12 PhysicistU Notes WBS Definition- Verify inputs from CTT, rote - relies on CTT ardata quality not critical, j M&S BOE- NA abor BOE- Runlla muon Level 1 ex	for final Technica for final Technica from all source Units C 200% sal-L1 d cal-L1 being re ust so it comes.	rechnical of the control of the cont	Commissioning. line Cost Ac \$0.00 utputs need a	it. Cost Re \$0.00 at least 1/8 of ds and CTT:	\$0.00 Cal L1.	Wed 5/2 Work 0 160 h	24/06 vt. Work 0 h	Thu 6 Baseline Work 0 h	8/06 Act. Work 0 h	\$0.00 Rem. Work 160 h	\$0.00	\$0.00	\$0.00	

WBS		Name							Start	Fini	sh	M&S EQ	M&S Labor	FNAL Labor	Total Cost	
1.5.3.4		Modify Muon	Pipeline	Depth				Thu	3/9/06	Tue 6/27/	06	\$0.00	\$0.00	\$11,486.00	\$11,486.00	
	WRS D	Definition-		_												
		ımmary element pro	vides for m	odifications to	muon electronics	required by t	he upgrade.									
1.5.3.4.1		Remove Muoi	n PDT fro	nt ends				Thu	3/9/06	Thu 3/16/	06	\$0.00	\$0.00	\$1,886.00	\$1,886.00	
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work	Ovt. Work	Baseline Work	Act. Work		-			
	12 37	PhysicistU SeniorElecEngF	200% 100%	\$0.00 \$1,886.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.0 \$1,886.0	0 40 1	n 0 h	0 h 0 h	0	h 40 h				
	86 97	Sten Hansen Penny Kasper	100% 100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.0 \$0.0	0 40 l 0 40 l		0 h 0 h	0					
	Notes			_												
		efinition- sk removes 94 (min	us a few alr	eady prepare	d during 2005 run	nina) muon Pl	DT frontends									
	M&S B	•	ao a ion an	oaay proparo	a aamig 2000 ran	9/	o i iromondo									
	NA NA	OE-														
	Labor E	BOE-														
			uon fronten	d maintenand	e: 3 boards per h	our per physic	cist to remove	e (two phy	sicists one weel	(). Time to remove	~18 mods	for A-layer will be	paced by access tim	e in cathedral, avoiding	L0 installation work. L	
1.5.3.4.2		Modify Muon	PDT front	ends				Fri	3/10/06	Fri 3/24/	06	\$0.00	\$0.00	\$9,600.00	\$9,600.00	
	ID 38	Resource Name SeniorElecTechF	Units 400%	Cost \$9,600.00	Baseline Cost \$0.00	Act. Cost \$0.00	Rem. Cost \$9,600.0	Work		Baseline Work	Act. Work	k Rem. Work 0 h 320 h	_			
	Notes		400%	\$9,000.00	\$0.00	\$0.00	\$9,000.0	JU 320	n u	ı on	(on 320 n				
	WBS D	efinition-		_												
	This ta	sk changes compor	nents (~ 2 p	er board) on 9	4 muon front end	s for increase	d pipeline de	pth.								
	M&S B NA	OE-														
		205														
	Labor E Runlla	BOE- experience from m	uon fronten	d maintenand	e: 3 hours per bo	ard bench wo	rk (4 technic	ians do bo	ards in 80 hours	s).						
1.5.3.4.3		Reinstall Muo	n PDT fro	nt ends				Tue :	3/21/06	Tue 3/28/	06	\$0.00	\$0.00	\$0.00	\$0.00	
	ID	Resource Name	Units		laseline Cost A	Act. Cost F	em. Cost	Work			t. Work	Rem. Work	ψ0.00	ψ0.00	ψ0.00	
	11 12	PhysicistF PhysicistU	100% 100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	40 h 40 h	0 h 0 h	0 h 0 h	0 h 0 h	40 h 40 h				
	44 86	SeniorElecEngU Sten Hansen	100% 100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	40 h 40 h	0 h 0 h	0 h 0 h	0 h 0 h	40 h 40 h				
	97	Penny Kasper	100%	\$0.00	\$0.00	\$0.00	\$0.00	40 h	0 h	0 h	0 h	40 h				
	Notes	Definition-		_												
		sk reinstalls 94 (min	ius a few ali	eady prepare	d during 2005 rur	ning) muon P	DT frontends	after they	are modified.							
	M&S B	OE-														
	NA															
	Labor E			d	0 bd b				(4		4- :4-!!	40				al. Hilah Oad
		Il be used for this pa		a maintenand	e: 2 boards per r	our per priysio	cist to reinsta	iii in detect	or (two priysicis	ts one week). Time	to instail ~	~18 boards for A-la	iyer will be paced by	access time in cathedra	al, avoiding L0 installation wo	ork. Likely zna
1.5.3.4.4		Retime Muon	PDT Sys	tem				Wed :	5/31/06	Tue 6/27/	06	\$0.00	\$0.00	\$0.00	\$0.00	
	ID	Resource Name	Units	Cost B			em. Cost	Work	Ovt. Work	Baseline Work A	t. Work	Rem. Work	*****	*	••••	
	11 12	PhysicistF PhysicistU	200% 200%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	320 h 320 h	0 h 0 h	0 h 0 h	0 h 0 h	320 h 320 h				
	Notes			_												
		efinition- sk re-times the muo	n odt systei	n after the nir	eline depth chan	ge. Most of w	ork must occ	ur after ret	urn of beam							
	M&S B		pa. 0,000	a u io pip	o dopui onan	3JUL OI W		160	0. 204111.							
	NA NA	UE-														
	Labor E	3OE-														
		experience forms t	he basis of	estimate.												
1.5.3.4.5		Muon Mods (Complete	•				Tue	6/27/06	Tue 6/27/	06	\$0.00	\$0.00	\$0.00	\$0.00	
1.0.0.4.0	Notes		Joinpiele	•				i ue i	JI21100	1 de 0/2//	00	ψυ.υυ	φυ.υυ	φυ.υυ	φυ.υυ	
	WBS D	efinition-		_												
	wilesto	ne-Muon pipeline d	eptns modif	ications comp	neted.											

		Name						Start		Finish	M&S EQ	M&S L	abor	FNAL Labor	Total Cost
.3.5		L1 Central Trac	k Trigge				V	Ved 3/8/06		Wed 5/17/06	\$0.00	\$	0.00	\$37,720.00	\$37,720.00
	Notes WRS D	Pefinition-													
			des for impro	vements in the	e existing track tri	gger. It includ	des design and	development	of algorithn	s that utilize larger	FPGAs, and develo	pment and prod	curement o	of new Digital Front-End	I (DFE) boards that utilize these FP
.3.5.1		Installation An	d Technic	al Commis	ssioning		V	Ved 3/8/06		Wed 5/17/06	\$0.00	\$	0.00	\$37,720.00	\$37,720.00
	Notes				_										
		efinition- mmary task provides	or the share	d installation e	effort of all the DFI	EA's for the n	ew Central Trac	ck Trigger.							
5.3.5.1.1	l	Fermilab Contr	ibution				v	Ved 3/8/06		Wed 5/17/06	\$0.00	S.	0.00	\$37,720.00	\$37,720.00
5.0.0.1.1	Notes		ibution				•	100 0/0/00		WCa 5/1//00	ψ0.00	•	3.00	ψ31,120.00	ψ01,120.00
		efinition- mmary task provides	for the chare	d installation o	offert of all the DEI	E A 'c for the n	ow Control Trac	ok Triggor							
	TTIIS SU	illillary task provides	or the share	a motanation e	enort of all the Di	LAS IOI LITE II	ew Central Hac	sk rrigger.							
.5.3.5.1.1.1		Install DFEA boards					V	Ved 3/8/06		Wed 3/22/06	\$0.00	\$	0.00	\$7,544.00	\$7,544.00
	ID	Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cost	Work Ov	rt. Work	Baseline Work	Act. Work Rem.	Work		. ,	
	11 37	PhysicistF SeniorElecEngF	50% 200%	\$0.00 \$7,544.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$7,544.00	40 h 160 h	0 h 0 h	0 h 0 h	0 h 0 h	40 h 160 h			
	79 80	Jamieson Olson Stefan Grunendahl	100% 50%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	80 h 40 h	0 h 0 h	0 h 0 h	0 h 0 h	80 h 40 h			
	82	Stefano Rapisarda	100%	\$0.00	\$0.00	\$0.00	\$0.00	80 h	0 h	0 h	0 h	80 h			
	Notes	efinition-													
		e old crates (in rack P	C03 on platf	orm), install 2	new crates, hook	up 320 input a	and 80 output ca	ables, load D	FEB boards	in crates (40 board	ls total).				
	Labor B	BOE-													
		inn and Stefano Rapi	sarda (Eng)	and Stefan Gr	unendahl 2 we	eks effort.									
	M&S B	OE-													
	NA														
5.3.5.1.1	1.2	Debug all Inputs						ed 3/22/06		Wed 4/19/06	\$0.00		0.00	\$15,088.00	\$15,088.00
	1D 11	Resource Name PhysicistF	Units 100%	Cost \$0.00	Baseline Cost \$0.00	Act. Cost \$0.00	Rem. Cost \$0.00	Work 0	Ovt. Work 0 h	Baseline Work 0 h	Act. Work Rem	n. Work 160 h			
	37	SeniorElecEngF	200%	\$15,088.00	\$0.00	\$0.00	\$15,088.00	320 h	0 h	0 h	0 h	320 h			
	79 80	Jamieson Olson Stefan Grunendahl	100% 100%	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	160 h 160 h	0 h 0 h	0 h 0 h	0 h 0 h	160 h 160 h			
	82	Stefano Rapisarda	100%	\$0.00	\$0.00	\$0.00	\$0.00	160 h	0 h	0 h	0 h	160 h			
	Notes														
	WBS D	definition- nputs from AFE, SCL.	(Caution if A	AFEII is in picto	ure!). Need trigge	r framework/o	clock.								
	WBS D Verify in M&S B0	definition- nputs from AFE, SCL.	(Caution if A	AFEII is in picto	ure!). Need trigge	r framework/o	clock.								
	WBS D Verify ir	definition- nputs from AFE, SCL.	(Caution if A	AFEII is in pict	ure!). Need trigge	r framework/o	clock.								
	WBS D Verify ir M&S BO NA Labor B	efinition- nputs from AFE, SCL. OE- 3OE-		·				arallal test star	nd perform	ed by physicists. En	gineers play consult	lting role. Time	can readil	v extend to two months	if AFFIL iterations needed
50544	WBS D Verify ir M&S BO NA Labor B Run2a	efinition- nputs from AFE, SCL. OE- BOE- CTT experience takin		·			y operated in pa		nd, perform					•	if AFEII iterations needed.
5.3.5.1.1	WBS D Verify ir M&S BO NA Labor B Run2a	efinition- nputs from AFE, SCL. OE- GOE- CTT experience takin Verify Outputs	g into accou	nt the fact that	all DFEA have be	een previously	y operated in pa We	ed 4/19/06		Wed 5/17/06	\$0.00	\$(can readil 0.00	y extend to two months \$15,088.00	if AFEII iterations needed. \$15,088.00
5.3.5.1.1	WBS D Verify ir M&S BG NA Labor B Run2a G	lefinition- nputs from AFE, SCL. OE- GOE- CTT experience takin Verify Outputs Resource Name PhysicistF	g into accour	Cost \$0.00	all DFEA have be	Act. Cost	y operated in pa Wi Rem. Cost \$0.00	ed 4/19/06 Work (Ovt. Work 0 h	Wed 5/17/06 Baseline Work 0 h	\$0.00 Act. Work Rem	160 h		•	
 5.3.5.1.1	WBS D Verify ir M&S BC NA Labor E Run2a c	lefinition- nputs from AFE, SCL. OE- BOE- CTT experience takin Verify Outputs Resource Name PhysicistF SeniorElecEngF	Units 100% 200%	Cost \$0.00 \$15,088.00	all DFEA have be	Act. Cost \$0.00 \$0.00	y operated in pa We Rem. Cost \$0.00 \$15,088.00	ed 4/19/06 Work 0 160 h 320 h	Ovt. Work 0 h 0 h	Wed 5/17/06 Baseline Work 0 h 0 h	\$0.00 Act. Work Rem 0 h 0 h	50 n. Work 160 h 320 h		•	
 5.3.5.1.1	WBS D Verify ir M&S BO NA Labor B Run2a II I.3 ID 11 37 79 80	efinition- nputs from AFE, SCL. OE- GOE- CTT experience takin Verify Outputs Resource Name PhysicistF SeniorElecEngF Jamieson Olson Stefan Grunendahl	Units 100% 200% 100%	Cost \$0.00 \$15,088.00 \$0.00 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00	y operated in pa WW. Rem. Cost \$0.00 \$15,088.00 \$0.00 \$0.00	ed 4/19/06 Work 0 160 h 320 h 160 h	Ovt. Work 0 h 0 h 0 h	Wed 5/17/06 Baseline Work 0 h 0 h 0 h 0 h	\$0.00 Act. Work Rem 0 h 0 h 0 h 0 h	50. Work 160 h 320 h 160 h 160 h		•	
5.3.5.1.1	M&S BO Verify ir M&S BO NA Labor B Run2a 1.3 ID 11 37 79 80 82	efinition- nputs from AFE, SCL. OE- GOE- CTT experience takin Verify Outputs Resource Name PhysicistF SeniorElecEngF Jamieson Olson Stefan Grunendahl Stefano Rapisarda	g into account Units 100% 200% 100%	Cost \$0.00 \$15,088.00 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00	y operated in pa We Rem. Cost \$0.00 \$15,088.00 \$0.00	ed 4/19/06 Work 0 160 h 320 h 160 h	Ovt. Work 0 h 0 h 0 h	Wed 5/17/06 Baseline Work 0 h 0 h 0 h	\$0.00 Act. Work Rem 0 h 0 h	1. Work 160 h 320 h 160 h		•	
5.3.5.1.1	WBS D Verify ir M&S BC NA Labor B Run2a i 1.3 ID 11 37 79 80 82 Notes WBS D	efinition- nputs from AFE, SCL. OE- BOE- CTT experience takin Verify Outputs Resource Name PhysicistF SeniorElecEngF Jamieson Olson Stefan Grunendahl Stefano Rapisarda	Units 100% 200% 100% 100% 100%	Cost \$0.00 \$15,086.00 \$0.00 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	y operated in pa Wi Rem. Cost \$0.00 \$15,088.00 \$0.00 \$0.00 \$0.00	ed 4/19/06 Work 0 160 h 320 h 160 h	Ovt. Work 0 h 0 h 0 h	Wed 5/17/06 Baseline Work 0 h 0 h 0 h 0 h	\$0.00 Act. Work Rem 0 h 0 h 0 h 0 h	50. Work 160 h 320 h 160 h 160 h		•	
5.3.5.1.1	WBS D Verify ir M&S BC NA Labor B Run2a i 1.3 ID 11 37 79 80 82 Notes WBS D	Jefinition- Inputs from AFE, SCL. OE- BOE- CTT experience takin Verify Outputs Resource Name PhysicistF SeniorElecEngF Jamieson Olson Stefan Grunendahl Stefano Rapisarda	Units 100% 200% 100% 100% 100%	Cost \$0.00 \$15,086.00 \$0.00 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	y operated in pa Wi Rem. Cost \$0.00 \$15,088.00 \$0.00 \$0.00 \$0.00	ed 4/19/06 Work 0 160 h 320 h 160 h	Ovt. Work 0 h 0 h 0 h	Wed 5/17/06 Baseline Work 0 h 0 h 0 h 0 h	\$0.00 Act. Work Rem 0 h 0 h 0 h 0 h	50. Work 160 h 320 h 160 h 160 h		•	
5.3.5.1.1	WBS D Verify ir M&S BC NA Labor B Run2a (1) 1.3 ID 111 37 79 80 82 Notes WBS D Verify o	efinition- nputs from AFE, SCL. OE- BOE- CTT experience takin Verify Outputs Resource Name PhysicistF SeniorElecEngF Jamieson Olson Stefan Grunendahl Stefano Rapisarda definition- puputs to L1 Muon, L2 BOE-	Units 100% 200% 100% 100% L3, using te	Cost \$0.00 \$15,088.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	V operated in pa Wi Rem. Cost \$0.00 \$15,088.00 \$0.00 \$0.00 \$0.00 not available.	ed 4/19/06 Work (160 h 320 h 160 h 160 h	Ovt. Work	Wed 5/17/06 Baseline Work 0 h 0 h 0 h 0 h 0 h	\$0.00 Act. Work Rem 0 h 0 h 0 h 0 h	50. Work 160 h 320 h 160 h 160 h		•	
.5.3.5.1.1	WBS D Verify ir M&S BC NA Labor B Run2a (1) 1.3 ID 111 37 79 80 82 Notes WBS D Verify o	Pefinition- Inputs from AFE, SCL. OE- BOE- CTT experience takin Verify Outputs Resource Name PhysicistF SeniorElecEngF Jamieson Olson Stefan Grunendahl Stefano Rapisarda Pefinition- Suputs to L1 Muon, L2	Units 100% 200% 100% 100% L3, using te	Cost \$0.00 \$15,088.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	V operated in pa Wi Rem. Cost \$0.00 \$15,088.00 \$0.00 \$0.00 \$0.00 not available.	ed 4/19/06 Work (160 h 320 h 160 h 160 h	Ovt. Work	Wed 5/17/06 Baseline Work 0 h 0 h 0 h 0 h 0 h	\$0.00 Act. Work Rem 0 h 0 h 0 h 0 h	50. Work 160 h 320 h 160 h 160 h		•	
.5.3.5.1.1	WBS D Verify ir M&S BC NA Labor B Run2a (1) 1.3 ID 111 37 79 80 82 Notes WBS D Verify o	efinition- nputs from AFE, SCL. OE- BOE- CTT experience takin Verify Outputs Resource Name PhysicistF SeniorElecEngF Jamieson Olson Stefan Grunendahl Stefano Rapisarda definition- puputs to L1 Muon, L2 BOE-	Units 100% 200% 100% 100% L3, using te	Cost \$0.00 \$15,088.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	V operated in pa Wi Rem. Cost \$0.00 \$15,088.00 \$0.00 \$0.00 \$0.00 not available.	ed 4/19/06 Work (160 h 320 h 160 h 160 h	Ovt. Work	Wed 5/17/06 Baseline Work 0 h 0 h 0 h 0 h 0 h	\$0.00 Act. Work Rem 0 h 0 h 0 h 0 h	50. Work 160 h 320 h 160 h 160 h		•	
.5.3.5.1.1	WBS D Verify ir M&S BO NA Labor E Run2a i 1.3 ID 11 37 79 80 82 Notes WBS D Verify o Labor E Run2a	efinition- nputs from AFE, SCL. OE- BOE- CTT experience takin Verify Outputs Resource Name PhysicistF SeniorElecEngF Jamieson Olson Stefan Grunendahl Stefano Rapisarda definition- puputs to L1 Muon, L2 BOE-	Units 100% 200% 100% 100% 100% 100% 100%	Cost \$0.00 \$15,088.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	wo perated in pa Wing Rem. Cost \$0.00 \$15,088.00 \$0.00 \$0.00 \$0.00 not available. st stand, perform	ed 4/19/06 Work (160 h 320 h 160 h 160 h	Ovt. Work Oh Oh Oh Oh Oh	Wed 5/17/06 Baseline Work 0 h 0 h 0 h 0 h 0 h	\$0.00 Act. Work Rem 0 h 0 h 0 h 0 h	1. Work 160 h 320 h 160 h 160 h 160 h		•	
	WBS D Verify ir M&S BO NA Labor E Run2a I 1.3 ID 11 37 79 80 80 80 80 WBS D Verify o Labor E Run2a	Definition- Inputs from AFE, SCL. OE- BOE- CTT experience takin Verify Outputs Resource Name PhysicistF SeniorElecEngF Jamieson Olson Stefan Grunendahl Stefano Rapisarda Definition- Duputs to L1 Muon, L2 BOE- CTT experience takin Boston U Cont	Units 100% 200% 100% 100% 100% 100% 100%	Cost \$0.00 \$15,088.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	wo perated in pa Wing Rem. Cost \$0.00 \$15,088.00 \$0.00 \$0.00 \$0.00 not available. st stand, perform	ed 4/19/06 Work 160 h 320 h 160 h 160 h 160 h	Ovt. Work Oh Oh Oh Oh Oh	Wed 5/17/06 Baseline Work 0 h 0 h 0 h 0 h 0 h 10 h 10 h 10 h 10	\$0.00 Act. Work Rem O h O h O h O h O h	1. Work 160 h 320 h 160 h 160 h 160 h	0.00	\$15,088.00	\$15,088.00
	WBS D Verify ir M&S BO NA Labor B Run2a i 1.3 ID 11 37 79 80 82 Notes WBS D Verify o Labor B Run2a	Definition- Inputs from AFE, SCL. OE- BOE- CTT experience takin Verify Outputs Resource Name Physicist SeniorElecEngf Jamieson Olson Stefan Grunendahl Stefano Rapisarda Definition- Duputs to L1 Muon, L2 BOE- CTT experience takin Boston U Cont Definition-	Units 100% 200% 100% 100% 100% 100%	Cost \$0.00 \$15,088.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 an use separate or	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$1.00 \$0.00	W. Rem. Cost \$0.00 \$15,088.00 \$0.00	ed 4/19/06 Work 160 h 320 h 160 h 160 h 160 h 160 h	Ovt. Work Oh Oh Oh Oh Oh	Wed 5/17/06 Baseline Work 0 h 0 h 0 h 0 h 0 h 10 h 10 h 10 h 10	\$0.00 Act. Work Rem O h O h O h O h O h	1. Work 160 h 320 h 160 h 160 h 160 h	0.00	\$15,088.00	\$15,088.00
	WBS D Verify ir M&S BO NA Labor B Run2a i 1.3 ID 11 37 79 80 82 Notes WBS D Verify o Labor B Run2a	Definition- Inputs from AFE, SCL. OE- BOE- CTT experience takin Verify Outputs Resource Name PhysicistF SeniorElecEngF Jamieson Olson Stefan Grunendahl Stefano Rapisarda Definition- Duputs to L1 Muon, L2 BOE- CTT experience takin Boston U Cont	Units 100% 200% 100% 100% 100% 100% 100%	Cost \$0.00 \$15,088.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 an use separate or	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$1.00 \$0.00	W. Rem. Cost \$0.00 \$15,088.00 \$0.00	ed 4/19/06 Work 160 h 320 h 160 h 160 h 160 h 160 h	Ovt. Work Oh Oh Oh Oh Oh	Wed 5/17/06 Baseline Work 0 h 0 h 0 h 0 h 0 h 10 h 10 h 10 h 10	\$0.00 Act. Work Rem O h O h O h O h O h	1. Work 160 h 320 h 160 h 160 h 160 h	0.00	\$15,088.00	\$15,088.00
	WBS D Verify ir M&S B0 NA Labor B Run2a 1 1.3 ID 11 37 79 80 82 WBS D Verify o Labor B Run2a	Definition- Inputs from AFE, SCL. OE- BOE- CTT experience takin Verify Outputs Resource Name Physicist SeniorElecEngf Jamieson Olson Stefan Grunendahl Stefano Rapisarda Definition- Duputs to L1 Muon, L2 BOE- CTT experience takin Boston U Cont Definition-	Units 100% 200% 100% 100% 100% 100% 100% 100%	Cost \$0.00 \$15,088.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Baseline Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 an use separate or	Act. Cost \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$1.00 \$0.00	Working of the control of the contro	ed 4/19/06 Work 160 h 320 h 160 h 160 h 160 h 160 h	Ovi. Work Oh Oh Oh Oh Oh Oh	Wed 5/17/06 Baseline Work 0 h 0 h 0 h 0 h 0 h 10 h 10 h 10 h 10	\$0.00 Act. Work Rem O h O h O h O h O h	1. Work 160 h 320 h 160 h 160 h 160 h	0.00	\$15,088.00	\$15,088.00

WBS M&S EQ Name Start Finish M&S Labor FNAL Labor **Total Cost** "Install DFEA boards" continued WBS Definition-Remove old crates (in rack PC03 on platform), install 2 new crates, hookup 320 input and 80 output cables, load DFEB boards in crates (40 boards total). 2 weeks effort. M&S BOE-NA WBS Definition-Install new DFEA boards on the run 2a DFE motherboards. (Boards can be installed on Tev-off days during Runlla -- final production of boards is scheduled to begin in March, 2005), but time is allowed after the beginning of the Runllb shutdown to install all boards. It will take about 16 man-days to install all 80 boards in the L1 CTT racks in the platform. M&S BOE-1.5.3.5.1.2.2 Wed 3/22/06 Wed 4/19/06 \$0.00 \$0.00 \$0.00 Debug all Inputs \$0.00 Resource Name Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work \$0.00 PhysicistU 200% \$0.00 \$0.00 \$0.00 320 h 0 h 0 h Notes WBS Definition-Verify inputs from AFE, SCL. M&S BOE-NA Run2a CTT experience taking into account the fact that all DFEA have been previously operated in parallel test stand, performed by physicists. Consult with engineers. WBS Definition-Verify inputs from AFE, SCL. Labor BOE-Run2a CTT experience, performed by physicists. Consult with engineers. 1.5.3.5.1.2.3 Wed 4/19/06 \$0.00 \$0.00 Wed 5/17/06 \$0.00 \$0.00 Verify Outputs Resource Name Units Work Cost Baseline Cost Act. Cost Rem. Cost Ovt. Work Baseline Work Act. Work Rem. Work \$0.00 \$0.00 PhysicistU 200% \$0.00 \$0.00 320 h Notes WBS Definition-Verify ouputs to L1 Muon, L2, L3 using test vectors. Run2a CTT experience taking into account all DFEA previously operated in parallel test stand, performed by physicists, performed by physicists. Consult with engineers. 1.5.3.5.1.3 **Notre Dame Contribution** Wed 3/8/06 Wed 5/17/06 \$0.00 \$0.00 \$0.00 \$0.00 WBS Definition-This summary task provides for the shared installation effort of all the DFEA's for the new Central Track Trigger. 1.5.3.5.1.3.1 Install DFEA boards Wed 3/8/06 Wed 3/22/06 \$0.00 \$0.00 \$0.00 \$0.00 Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work 12 \$0.00 \$0.00 \$0.00 \$0.00 80 h

Remove old crates (in rack PC03 on platform), install 2 new crates, hookup 320 input and 80 output cables, load DFEB boards in crates (40 boards total).

Labor BOE-

2 weeks effort.

M&S EQ WBS Name Start Finish M&S Labor FNAL Labor **Total Cost** "Install DFEA boards" continued Notes M&S BOE-NA Install new DFEA boards on the run 2a DFE motherboards. (Boards can be installed on Tev-off days during Runlla -- final production of boards is scheduled to begin in March, 2005), but time is allowed after the beginning of the Runllb shutdown to install all boards. Labor BOE-It will take about 16 man-days to install all 80 boards in the L1 CTT racks in the platform. M&S BOE-NA 1.5.3.5.1.3.2 Debug all Inputs Wed 3/22/06 Wed 4/19/06 \$0.00 \$0.00 \$0.00 \$0.00 Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work \$0.00 \$0.00 \$0.00 \$0.00 160 h 0 h WBS Definition-Verify inputs from AFE, SCL. M&S BOE-Labor BOE-Run2a CTT experience taking into account the fact that all DFEA have been previously operated in parallel test stand, performed by physicists. Consult with engineers. Time can readily extend to two months if AFEII iterations needed. 1.5.3.5.1.3.3 Verify Outputs Wed 4/19/06 Wed 5/17/06 \$0.00 \$0.00 \$0.00 \$0.00 Resource Name Units Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Cost Rem. Work 100% \$0.00 \$0.00 \$0.00 \$0.00 160 h 0 h 0 h Notes WBS Definition-Verify ouputs to L1 Muon, L2, L3 Run2a CTT experience taking into account all DFEA previously operated in parallel test stand, performed by physicists, performed by physicists. Consult with engineers. 1.5.3.5.1.4 **KU Contribution** Wed 3/8/06 Wed 5/17/06 \$0.00 \$0.00 \$0.00 \$0.00 WBS Definition-This summary task provides for the shared installation effort of all the DFEA's for the new Central Track Trigger. 1.5.3.5.1.4.1 Install DFEA boards Wed 3/8/06 Wed 3/22/06 \$0.00 \$0.00 \$0.00 \$0.00 Resource Name Units Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work Cost 12 PhysicistU 100% \$0.00 \$0.00 \$0.00 \$0.00 80 h 0 h Remove old crates (in rack PC03 on platform), install 2 new crates, hookup 320 input and 80 output cables, load DFEB boards in crates (40 boards total). Labor BOE-2 weeks effort. M&S BOE-NA 1.5.3.5.1.4.2 Wed 3/22/06 Wed 4/19/06 Debug all Inputs \$0.00 \$0.00 \$0.00 \$0.00 Resource Name Work Ovt. Work Baseline Work Rem. Work ID Units Act. Cost Rem. Cost Act. Work Cost Baseline Cost \$0.00 \$0.00 0 h 0 h 12 44 PhysicistU 100% \$0.00 \$0.00 \$0.00 160 h 0 h 0 h 160 h SeniorElecEnaU 100% \$0.00 \$0.00 \$0.00 160 h Notes

WBS Definition-

3S	Name	Start	Finish	M&S EQ	M&S Labor	FNAL Labor	Total Cost	
oug all	Inputs" continued Notes							
	Verify inputs from AFE, SCL.							
	M&S BOE-							
	NA							
	Labor BOE- Run2a CTT experience taking into account the fact that all DFEA have been previousl	y operated in parallel test stand, per	formed by physicists. Consul	It with engineers. T	ime can readily extend	d to two months if AFEII	iterations needed.	
F 2 F 4 /	1.2 Varify Outputs	Wad 4/40/00	Wed 5/17/00	\$0.00	00.00	#0.00	\$0.00	
5.3.5.1.4		Wed 4/19/06 Cost Work Ovt. Work	Wed 5/17/06 Baseline Work Act. Work	\$0.00 Rem. Work	\$0.00	\$0.00	\$0.00	
	12 PhysicistU 100% \$0.00 \$0.00 \$0.00	\$0.00 160 h 0 h	0 h 0 h	160 h				
	Notes WBS Definition-							
	Verify ouputs to L1 Muon, L2, L3							
	Labor BOE-							
	Run2a CTT experience taking into account all DFEA previously operated in parallel to	est stand, performed by physicists, p	errormed by physicists. Cons	suit with engineers				
5.3.5.2	L1CTT Installation & Technical Commissioning Complete	Wed 5/17/06	Wed 5/17/06	\$0.00	\$0.00	\$0.00	\$0.00	
0.0.0	Notes			V 0.00	V 5.00	V 0.00	V 5.000	
	WBS Definition- Milestone-The level 1 central track trigger has been technically commissioned.							
	,							
5.3.6	Level 2 Beta Processors	Tue 8/16/05	Tue 3/21/06	\$0.00	\$0.00	\$0.00	\$0.00	
3.3.0	Notes	Tue 0/10/03	1 de 3/21/00	ψ0.00	φ0.00	φ0.00	φυ.υυ	
	WBS Definition- This summary task provides for the installation of the L2 Beta trigger system and its te	chnical commissioning.						
5.3.6.1	Level 2 Beta Production Complete	Tue 8/16/05	Tue 8/16/05	\$0.00	\$0.00	\$0.00	\$0.00	
.5.5.6.1	Notes	Tue 0/10/03	Tue 0/10/03	ψ0.00	φυ.υυ	Ψ0.00	ψ0.00	
	WBS Definition- Milestone- All parts for upgrade Betas in hand and working.							
.5.3.6.2	Verify Assembled Processors	Tue 8/16/05	Tue 11/15/05	\$0.00	\$0.00	\$0.00	\$0.00	
3.3.0.2	Notes	Tue 0/10/03	Tue 11/15/05	Ψ0.00	φυ.υυ	φ0.00	φυ.υυ	
	WBS Definition- This summary task verifies processors in L2 trigger or test crates.							
.5.3.6.2.1	***	Tue 8/16/05	Mon 8/29/05	\$0.00	\$0.00	\$0.00	\$0.00	
.5.5.6.2.			Baseline Work Act. Work	ф0.00 Rem. Work	φ0.00	\$0.00	φυ.υυ	
	12 PhysicistU 100% \$0.00 \$0.00 \$0.00	\$0.00 80 h 0 h	0 h 0 h	80 h				
	Notes WBS Definition-							
	Cut first code release for new hardware. Update any trial code to meet release criteria							
	Labor BOE-							
	Experience w/ original Alpha and Beta processors: 1 physicist full time for 2 weeks.							
	M&S BOE- NA							
5.3.6.2.2	2 Online Code Support/Development	Tue 8/30/05	Tue 10/18/05	\$0.00	\$0.00	\$0.00	\$0.00	
	ID Resource Name Units Cost Baseline Cost Act. Cost Rem.	Cost Work Ovt. Work E	Baseline Work Act. Work	Rem. Work	40.00	Ψ0.00	ψ0.00	
	12 PhysicistU 25% \$0.00 \$0.00 \$0.00	\$0.00 70 h 0 h	0 h 0 h	70 h				
	Notes WBS Definition-							
	Tune online code: Develop any enhanced driver features over Run 2a, coordinate the							

Column C	WBS	Name	Start	Finish	M&S EQ	M&S Labor	FNAL Labor	Total Cost	
1.5.8 Color No.									
1.5.3.6.2.3 Verify Processor Assemblies — VAX	M&S	es BOE-							
1.5.3.6.2 Separative Invalid		Verify Processor Assemblies UVA	Wed 10/19/05	Tue 11/1/05	\$0.00	\$0.00	\$0.00	\$0.00	
No. Page P	ID	Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost	Work Ovt. Work	Baseline Work Act. Work	Rem. Work	*****	****	• • • • • • • • • • • • • • • • • • • •	
1.5.3.6.2.4 Varify Processor Assemblies — ORS Wed 11/2/05 Tue 11/15/05 \$0.00			40 h 0 h	0 h 0 h	40 h				
Librar 905 - Expension of Nitrata Approx and Betta processor; physicist working 1/2 trans Mind 11/2/05 Tue 11/15/05 \$0.00 \$	WBS	Definition-							
Mas Section	Test	assembled processor boards in L2 trigger or test crates. Run through suite of I/O tests in	test crate.						
1.5.3.6.2.4 Welfly Processor Assembles - ORS									
1.5.8.6.2.4 Verify Processor Assemblies - ORS Report Very Very Processor Assemblies - ORS Report Very V	•	· · · · · · · · · · · · · · · · · · ·							
15	NA NA	501							
12 Pigeolate 20% \$0.00	1.5.3.6.2.4	Verify Processor Assemblies ORS	Wed 11/2/05	Tue 11/15/05	\$0.00	\$0.00	\$0.00	\$0.00	
Note Company Note Company Note Company Note Company Note Company Note									
Wilso Commission 12 higger or test crates 12 higger or test crates 12 higger or test crates 15.34.5.3 Installation And Technical Commissioning Week Week 15.34.5.3			4011 011	011	4011				
Labor BCE Experimence w/ Rur2a Alpha and Beta processors - run through salter of vio tests in test crass. S.3.6.3 Installation And Technical Commissioning Wed 3/1/06 Tue 3/21/06 \$0.00 \$0	WBS	Definition-							
Experience or National Alpha and Beata processors - run through auther of io leasts in test crase. New York New York New York New York New									
Note									
Wilso Definition-	1.5.3.6.3	Installation And Technical Commissioning	Wed 3/1/06	Tue 3/21/06	\$0.00	\$0.00	\$0.00	\$0.00	
This summary task installs the components of the L2 beta trigger and tests their operation.	Note	es							
D									
12	1.5.3.6.3.1	Install boards in L2 Trigger	Wed 3/1/06	Tue 3/7/06	\$0.00	\$0.00	\$0.00	\$0.00	
Substitution									
Substitution			40 n 0 n	on on	40 N				
Labor BOE- Experience w Run2a Alpha and Beta processors: 1 physicist working 1 week. 1.5.3.6.3.2 Technical commissioning-UVA Passure Name Units Cost Baseline Cost Act Cost Rem. Cost	WBS	Definition-							
1.5.3.6.3.2 Technical commissioning-USVA South Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work									
10 Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work	Expe	rience w/ Run2a Alpha and Beta processors: 1 physicist working 1 week.							
12	1.5.3.6.3.2	Technical commissioning-UVA	Wed 3/8/06	Tue 3/21/06	\$0.00	\$0.00	\$0.00	\$0.00	
Notes									
WBS Definition			0011 011	011 011	00 11				
Labor BOE- Experience w/ Run2a Alpha and Beta processors: 1 physicist for 2 weeks working 1/2 time. M&S BOE- NA 1.5.3.6.3.3 Technical commissioning-ORS D Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work	WBS	Definition-							
Experience w/ Run2a Alpha and Beta processors: 1 physicist for 2 weeks working 1/2 time. M&S BOE- NA 1.5.3.6.3.3 Technical commissioning-ORS D Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work									
1.5.3.6.3.3 Technical commissioning-ORS									
1.5.3.6.3.3 Technical commissioning-ORS		BOE-							
1D Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work									
12		<u> </u>			•	\$0.00	\$0.00	\$0.00	
WBS Definition- Test boards in-situ after installation. Labor BOE- Experience w/ Run2a Alpha and Beta processors: 1physicist working 2 weeks 1/2 time. M&S BOE- NA Technical commissioning-FNAL D Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work D Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work D Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work D Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work D Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work D Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Ovt. Work Rem. Work D Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Ovt. Work Rem. Work D Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Ovt. Work O									
Test boards in-situ after installation. Labor BOE- Experience w/ Run2a Alpha and Beta processors: 1physicist working 2 weeks 1/2 time. M&S BOE- NA 1.5.3.6.3.4 Technical commissioning-FNAL ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work Verification Support S									
Experience w/ Run2a Alpha and Beta processors: 1physicist working 2 weeks 1/2 time. M&S BOE- NA 1.5.3.6.3.4 Technical commissioning-FNAL D Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work									
M&S BOE- NA 1.5.3.6.3.4 Technical commissioning-FNAL Wed 3/8/06 Tue 3/21/06 \$0.00 \$0.00 \$0.00 \$0.00 D Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work									
NA 1.5.3.6.3.4 Technical commissioning-FNAL Wed 3/8/06 Tue 3/21/06 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 D Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work	•								
1.5.3.6.3.4 Technical commissioning-FNAL Wed 3/8/06 Tue 3/21/06 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00		BOE-							
ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work	1.5.3.6.3.4	Technical commissioning-FNAL	Wed 3/8/06	Tue 3/21/06	\$0.00	\$0.00	\$0.00	\$0.00	
		Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost			•	20.00	ψο.οο	*****	

VBS		Name					Start	Finish	M&S EQ	M&S Labor	FNAL Labor	Total Cost	
echnical		ssioning-FNAL" conti	inued										
	Notes WBS De	efinition-											
		ards in-situ after installatio	n.										
	Labor B	OE-											
		ed labor (1/4 time physicis	t) for swapping	g boards and/or re	cabling crate	s during in-situ	tests.						
5.3.6.4		Level 2 Beta Instal	led & Tech	nical Commi	ssionina C	Comple	Tue 3/21/06	Tue 3/21/06	\$0.00	\$0.00	\$0.00	\$0.00	
	Notes								*****	40.00	V	*****	
	WBS De	efinition- ne-New Beta processors ir	netalled and i/o	n functions tested	in-citu								
	Willestor				III-Situ.								
5.3.7		L2 Silicon Track T	rigger Upg	rade			Wed 6/15/05	Fri 6/23/06	\$500.00	\$0.00	\$4,418.50	\$4,918.50	
	Notes WBS De	efinition-											
	This sun	mmary task element includ						of inputs from the Run 2b silicor				boards of the Run 2a type	, together w
	develop	ment and production of a	new board typ	e (the Link Echo E	Board). Also i	ncluded are fir	mware changes, procui	rement of additional, slightly mo	dified backplanes, ai	nd additional cabling a	nd connector hardware.		
.3.7.1		L2 STT Installation	1				Wed 6/15/05	Tue 3/7/06	\$500.00	\$0.00	\$4,418.50	\$4,918.50	
	Notes WBS De	ofinition											
		mmary taskcovers installa	ition of the con	mponents of the S	TT.								
5.3.7.1.1		STT Module Install					Wed 3/1/06	Tue 3/7/06	\$0.00	\$0.00	\$0.00	\$0.00	
3.3.7.1.1	ID	Resource Name Units	s Cost	Baseline Cost	Act. Cost	Rem. Cost	Work Ovt. Work	Baseline Work Act. Work	Rem. Work	Ψ0.00	ψ0.00	ψ0.00	
	12	PhysicistU 100		\$0.00	\$0.00	\$0.00	40 h 0 l						
	Notes WBS De												
		0 Silicon Trigger Cards: D	aughter board	that processes ra	w data from S	SMT. Design a	s the same as for Run 2	2A.					
	I ahaa D	05											
	Labor B	OE- rovided by physicists: 1 ma	an-week.										
	1400 DC	S-F											
	M&S BC	DE-											
5 2 7 4 2	NA						Wod 2/1/06	Tuo 2/7/06	00.00	00.00	\$0.00	\$0.00	
5.3.7.1.2	NA	VTM Install	Cost	Pasalina Cast	Act Cost	Rom Cost	Wed 3/1/06	Tue 3/7/06	\$0.00	\$0.00	\$0.00	\$0.00	
5.3.7.1.2	NA			Baseline Cost \$0.00	Act. Cost \$0.00	Rem. Cost \$0.00	Wed 3/1/06 Work Ovt. Work 40 h 01	Baseline Work Act. Work	Rem. Work	\$0.00	\$0.00	\$0.00	
5.3.7.1.2	NA ID 12 Notes	VTM Install Resource Name Units PhysicistU 100					Work Ovt. Work	Baseline Work Act. Work	Rem. Work	\$0.00	\$0.00	\$0.00	
5.3.7.1.2	NA ID 12 Notes WBS De	VTM Install Resource Name Units PhysicistU 100 efinition-	9% \$0.00	\$0.00	\$0.00	\$0.00	Work Ovt. Work 40 h 0 i	Baseline Work Act. Work	Rem. Work h 40 h		·	\$0.00	
5.3.7.1.2	NA ID 12 Notes WBS De Install 10	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules	9% \$0.00	\$0.00	\$0.00	\$0.00	Work Ovt. Work 40 h 0 i	Baseline Work Act. Work	Rem. Work h 40 h		·	\$0.00	
5.3.7.1.2	ID 12 Notes WBS De Install 10 Labor Be	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules OE-	9% \$0.00 	\$0.00	\$0.00	\$0.00	Work Ovt. Work 40 h 0 i	Baseline Work Act. Work	Rem. Work h 40 h		·	\$0.00	
5.3.7.1.2	ID 12 Notes WBS De Install 10 Labor Br	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules OE- rovided by Physicists: 1 m	9% \$0.00 	\$0.00	\$0.00	\$0.00	Work Ovt. Work 40 h 0 i	Baseline Work Act. Work	Rem. Work h 40 h		·	\$0.00	
5.3.7.1.2	ID 12 Notes WBS De Install 10 Labor Br Labor pr	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules OE- rovided by Physicists: 1 m	9% \$0.00 	\$0.00	\$0.00	\$0.00	Work Ovt. Work 40 h 0 i	Baseline Work Act. Work	Rem. Work h 40 h		·	\$0.00	
	NA ID 12 Notes WBS De Install 10 Labor Br Labor pr M&S BC NA	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules OE- rovided by Physicists: 1 m DE-	9% \$0.00 	\$0.00	\$0.00	\$0.00	Work Ovt. Work 40 h 0 t	Baseline Work Act. Work n 0 h 0 aw data sent by SMT. They are	Rem. Work h 40 h	as part of the SVX D	AQ system.		
	ID 12 Notes WBS De Install 10 Labor Be Labor pr M&S BC NA	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules OE- rovided by Physicists: 1 m DE- TFC Module Install	s: 9U board wi	\$0.00	\$0.00	\$0.00	Work Ovt. Work 40 h 0 t	Baseline Work Act. Work n 0 h 0 aw data sent by SMT. They are Tue 3/7/06	Rem. Work h 40 h used in D0 and CDF		·	\$0.00	
	ID 12 Notes WBS De Install 10 Labor Br Labor pr M&S BC NA	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules OE- rovided by Physicists: 1 m DE- TFC Module Install Resource Name Units	s: 9U board wi	\$0.00	\$0.00 ers and g-link Act. Cost	\$0.00 serial link reco	Work Ovt. Work 40 h Serivers that receive the receive	Baseline Work Act. Work aw data sent by SMT. They are Tue 3/7/06 Baseline Work Act. Work	Rem. Work h 40 h used in D0 and CDF \$0.00 Rem. Work	as part of the SVX D	AQ system.		
	ID 12 Notes WBS De Install 10 Labor Br	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules OE- rovided by Physicists: 1 m DE- TFC Module Install Resource Name Units	s: 9U board win	\$0.00 ith 4 optical receiv Baseline Cost	\$0.00	\$0.00	Work Ovt. Work 40 h Sivers that receive the received the received the receive the received the receive	Baseline Work Act. Work aw data sent by SMT. They are Tue 3/7/06 Baseline Work Act. Work	Rem. Work h 40 h used in D0 and CDF \$0.00 Rem. Work	as part of the SVX D	AQ system.		
	NA ID 12 Notes WBS De Install 10 Labor Bi Labor pi M&S BC NA ID 12 Notes WBS De WBS De WBS De WBS De	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules OE- rovided by Physicists: 1 m DE- TFC Module Install Resource Name Units PhysicistU 100 efinition-	s: 9U board will an week Cost SOOO	\$0.00 th 4 optical receiv Baseline Cost \$0.00	\$0.00 ers and g-link Act. Cost \$0.00	\$0.00 serial link rece Rem. Cost \$0.00	Work Ovt. Work 40 h Sivers that receive the receive t	Baseline Work	Rem. Work h 40 h used in D0 and CDF \$0.00 Rem. Work	as part of the SVX D	AQ system.		
	NA ID 12 Notes WBS De Install 10 Labor Bi Labor pi M&S BC NA ID 12 Notes WBS De WBS De WBS De WBS De	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules OE- rovided by Physicists: 1 m DE- TFC Module Install Resource Name Units PhysicistU 100	s: 9U board will an week Cost SOOO	\$0.00 th 4 optical receiv Baseline Cost \$0.00	\$0.00 ers and g-link Act. Cost \$0.00	\$0.00 serial link rece Rem. Cost \$0.00	Work Ovt. Work 40 h Sivers that receive the receive t	Baseline Work	Rem. Work h 40 h used in D0 and CDF \$0.00 Rem. Work	as part of the SVX D	AQ system.		
	ID 12 Notes WBS De Install 11 Labor Bi Labor pi M&S BC NA ID 12 Notes WBS De Install 8 Labor Bi	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules OE- rovided by Physicists: 1 m DE- TFC Module Install Resource Name Units PhysicistU 100 efinition- Track-Fit Trajectory Cards	s: 9U board will an week Cost S Cost S S Cost S S Cost	\$0.00 th 4 optical receiv Baseline Cost \$0.00	\$0.00 ers and g-link Act. Cost \$0.00	\$0.00 serial link rece Rem. Cost \$0.00	Work Ovt. Work 40 h Sivers that receive the receive t	Baseline Work	Rem. Work h 40 h used in D0 and CDF \$0.00 Rem. Work	as part of the SVX D	AQ system.		
	ID 12 Notes WBS De Install 11 Labor Bi Labor pi M&S BC NA ID 12 Notes WBS De Install 8 Labor Bi	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules OE- rovided by Physicists: 1 m DE- TFC Module Install Resource Name Units PhysicistU 100 efinition- Track-Fit Trajectory Card:	s: 9U board will an week Cost S Cost S S Cost S S Cost S S Cost	\$0.00 th 4 optical receiv Baseline Cost \$0.00	\$0.00 ers and g-link Act. Cost \$0.00	\$0.00 serial link rece Rem. Cost \$0.00	Work Ovt. Work 40 h Sivers that receive the receive t	Baseline Work	Rem. Work h 40 h used in D0 and CDF \$0.00 Rem. Work	as part of the SVX D	AQ system.		
	ID 12 Notes WBS De Install 10 Labor Br Labor Br Labor Br M&S BC NA ID 12 Notes WBS De Install 8 Labor Br Labor Br Labor Br Labor Br Labor Br Labor Br	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules OE- rovided by Physicists: 1 m DE- TFC Module Install Resource Name Units PhysicistU 100 efinition- Track-Fit Trajectory Card: OE- rovided by Physicists: 1 m	s: 9U board will an week Cost S Cost S S Cost S S Cost S S Cost	\$0.00 th 4 optical receiv Baseline Cost \$0.00	\$0.00 ers and g-link Act. Cost \$0.00	\$0.00 serial link rece Rem. Cost \$0.00	Work Ovt. Work 40 h Sivers that receive the receive t	Baseline Work	Rem. Work h 40 h used in D0 and CDF \$0.00 Rem. Work	as part of the SVX D	AQ system.		
	ID 12 Notes WBS De Install 10 Labor Bi Labor pi M&S BC NA ID 12 Notes WBS De Install 8 Labor Bi Labor pr	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules OE- rovided by Physicists: 1 m DE- TFC Module Install Resource Name Units PhysicistU 100 efinition- Track-Fit Trajectory Card: OE- rovided by Physicists: 1 m	s: 9U board will an week Cost S Cost S S Cost S S Cost S S Cost	\$0.00 th 4 optical receiv Baseline Cost \$0.00	\$0.00 ers and g-link Act. Cost \$0.00	\$0.00 serial link rece Rem. Cost \$0.00	Work Ovt. Work 40 h Sivers that receive the receive t	Baseline Work	Rem. Work h 40 h used in D0 and CDF \$0.00 Rem. Work	as part of the SVX D	AQ system.		
5.3.7.1.2 5.3.7.1.3	ID 12 Notes WBS De Install 10 Labor Bi Labor pi M&S BC NA ID 12 Notes WBS De Install 8 Labor Bi Labor Bi Labor Bi Labor Bi Labor Bi Labor Bi NA	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules OE- rovided by Physicists: 1 m DE- TFC Module Install Resource Name Units PhysicistU 100 efinition- Track-Fit Trajectory Card: OE- rovided by Physicists: 1 m	s: 9U board will an week Cost S Cost S S Cost S S Cost S S Cost	\$0.00 th 4 optical receiv Baseline Cost \$0.00	\$0.00 ers and g-link Act. Cost \$0.00	\$0.00 serial link rece Rem. Cost \$0.00	Work Ovt. Work 40 h Sivers that receive the receive t	Baseline Work	Rem. Work h 40 h used in D0 and CDF \$0.00 Rem. Work	as part of the SVX D	AQ system.		
5.3.7.1.3	ID 12 Notes WBS De Install 10 Labor Br Labor pr M&S BC NA ID 12 Notes WBS De Install 8 Labor Br NA	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules OE- rovided by Physicists: 1 m DE- TFC Module Install Resource Name Units PhysicistU 100 efinition- Track-Fit Trajectory Card- OE- rovided by Physicists: 1 m DE- Splitters Install Resource Name Units	3: 9U board will an week S Cost 30 \$0.00 S: Daughter both an week	\$0.00 th 4 optical receiv Baseline Cost \$0.00 pard that fits a traj	\$0.00 ers and g-link Act. Cost \$0.00 ectory to hits	\$0.00 serial link reco	Work Ovt. Work 40 h 0 l serivers that receive the rec	Baseline Work	Rem. Work	\$0.00	AQ system.	\$0.00	
5.3.7.1.3	ID 12 Notes WBS De Install 10 Labor Bi Labor pi M&S BC NA ID 12 Notes WBS De Install 8 Labor Bi Labor Bi Labor pi M&S BC	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules OE- rovided by Physicists: 1 m DE- TFC Module Install Resource Name Units PhysicistU 100 efinition- Track-Fit Trajectory Card: OE- Tovided by Physicists: 1 m DE- Splitters Install Resource Name Units PhysicistU 100 Efinition- Track-Fit Trajectory Card: OE- Splitters Install Resource Name Units PhysicistF	s: 9U board with an week Cost S: Daughter board with an week s: Cost Side Cost Cost Side Cost	\$0.00 th 4 optical receiv Baseline Cost \$0.00 pard that fits a traje t Baseline C	### \$0.00 ### Act. Cost ### \$0.00 ### Book ### Act. Cost ### Act. Act. Act. Act. Act. Act. Act. Act.	\$0.00 serial link rect Rem. Cost \$0.00 in SMT and CF	Work	Baseline Work	## Rem. Work ## 40 h used in D0 and CDF \$0.00 Rem. Work ## 40 h ## 40 h ## 500.00 ## Rem. Work ## Rem. Work ## 15 h 2	\$0.00	AQ system.	\$0.00	
3.3.7.1.3	ID 12 WBS De Install 10 Labor Br Labor pr M&S BC NA ID 12 Notes WBS De Install 8 Labor Br M&S BC Install 8 Labor Br Lab	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules OE- rovided by Physicists: 1 m DE- TFC Module Install Resource Name Units PhysicistU 100 efinition- Track-Fit Trajectory Card: OE- rovided by Physicists: 1 m DE- Splitters Install Resource Name Units DE- Splitters Install Resource Name Units PhysicistF SeniorMechTechF 1 MandS 1	9% \$0.00 s: 9U board with an week s: Cost \$0.00 s: Daughter board with \$0.00 an week s: Cost \$0.00 s: Daughter board with \$0.00 s: 20.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	### Baseline Cost ### Source Cost ### Source Cost ### Source Cost ### Baseline Cost	\$0.00 ers and g-link Act. Cost \$0.00 ectory to hits cost Act. C \$0.00 80.00 88.00 88.00	\$0.00 serial link rece Rem. Cost \$0.00 in SMT and CF \$0.00 \$1.75 \$1,45 \$0.00 \$1,75 \$1,45 \$0.00 \$1,50 \$0.00 \$1,50 \$1	Work	Baseline Work	## Rem. Work	\$0.00 \$0.00	AQ system.	\$0.00	
5.3.7.1.3	ID 12 Notes WBS De Install 10 Labor Br Labor pr M&S BC NA ID 12 Notes WBS De Install 8 Labor Br Labor	VTM Install Resource Name Units PhysicistU 100 efinition- 0 VME Transition Modules OE- rovided by Physicists: 1 m DE- TFC Module Install Resource Name Units PhysicistU 100 efinition- Track-Fit Trajectory Card: OE- rovided by Physicists: 1 m DE- Splitters Install Resource Name Units DE- Splitters Install Resource Name Units PhysicistF SeniorMechTechF MandS	9% \$0.00 s: 9U board with an week s Cost \$0.00 s: Daughter board with \$0.00 an week sits Cost \$0.00 s: Daughter board with \$0.00 s: Daughter board with \$0.00 s: \$0.00 \$0.00 \$1.00 \$1.00	### Baseline Cost ### Source Cost ### Source Cost ### Source Cost ### Baseline Cost	\$0.00 ers and g-link Act. Cost \$0.00 ectory to hits cost Act. C \$0.00 80.00 88.00 88.00	\$0.00 serial link rece Rem. Cost \$0.00 in SMT and CF \$0.00 \$1.75 \$1,45 \$0.00 \$1,75 \$1,45 \$0.00 \$1,50 \$1	Work	Baseline Work	## Rem. Work	\$0.00 \$0.00	AQ system.	\$0.00	

VBS	Name						Sta	ırt	Finish	M	&S EQ	M&S Labor	FNAL Labor	Total Cost	
•	stall" continued														
L	Notes _abor BOE-														
E	Estimate of labor required	to make panel	bracketry for	wall mounting o	of splitters.										
	M&S BOE- Panel on wall \$500														
.5.3.7.1.5	Fibers Install						Thu 7/7/0)5	Wed 7/13/05		\$0.00	\$0.00	\$1,620.50	\$1,620.50	
-	ID Resource Name	Units	Cost	Baseline Cost	Act. Cost	Rem. Cos		Ovt. Work	Baseline Work	Act. Work	Rem. Work	_			
	11 PhysicistF 37 SeniorElecEngF	10% 25%	\$0.00 \$471.50	\$0.00 \$0.00		9471.	.50 10 h	0 h 0 h		0 h 0 h	4 h 10 h				
	40 SeniorMechTechF 55 Linda Bagby	100% 10%	\$1,149.00 \$0.00	\$0.00 \$0.00	\$0.00	\$0.	0.00 4 h	0 h 0 h	0 h 0 h	0 h 0 h	40 h 4 h				
	72 John Anderson	25%	\$0.00	\$0.00	\$0.00	0 \$0.	0.00 10 h	0 h	0 h	0 h	10 h				
	Notes NBS Definition-														
II.	Nstall 148 Optical fibers f	rom splitters to	VRBs(74) ai	nd to STT(74).											
	_abor BOE- Estimates based on RunII	a avnariance: 1	I took and 1 r	shuciaist working	full time. plu	e cable ezar	oversight (25%)								
		а ехрепенсе.	r tech and i p	oriyaiciat working	j iuli time, piu	is cable czai	oversigni (25%).								
	M&S BOE- NA. (Fibers in Uprade Pro	oject STT budg	jet).												
5.3.7.1.6	L2 STT Hard	ware Instal	led				Tue 3/7/0)6	Tue 3/7/06		\$0.00	\$0.00	\$0.00	\$0.00	
	Notes										• • • • • • • • • • • • • • • • • • • •	*****	*****	*****	
V	WBS Definition- Milestone-All elements of	the silicon tracl	k trigger have	been installed.											
5.3.7.2	L2 STT Tech	nical Comp	niesionino	•			Thu 5/25/0	16	Fri 6/23/06		\$0.00	\$0.00	\$0.00	\$0.00	
	Notes	ilicai collii	ilissioiiiig	,			1110 3/23/C	,,,	111 0/23/00		ψ0.00	φ0.00	φ0.00	φ0.00	
V	NBS Definition- Γhis summary task provid	es for a full sve	tom tost: con	d teet data throu	igh all module	es verify outr	nut interface with	other evet	eme teet downloadir	a and monite	oring (likely c	an lice carliancers	1553 to generate natter	e (elow huret rate only)	Access to CH
	needed.	es ioi a iuii sys	tem test. sem	u test uata tiliou	igir all module	es, verily out	put, interrace with	Olliei Sysii	ems, test downloadii	g and monit	offing (likely ca	an use sequencers,	1555, to generate patter	s (slow burst rate orlly).	Access to CIT
r.	100000														
	Technical Co	mmissioning	g, BU effort	t			Thu 5/25/0)6	Fri 6/23/06		\$0.00	\$0.00	\$0.00	\$0.00	
5.3.7.2.1	Technical Co	Units	Cost Base	eline Cost Ad			Work Ovt. W	ork Ba	aseline Work Act. I	Vork Ren	n. Work	\$0.00	\$0.00	\$0.00	
5.3.7.2.1	Technical Co ID Resource Name 12 PhysicistU	Units			ct. Cost R \$0.00	em. Cost					*	\$0.00	\$0.00	\$0.00	
5.3.7.2.1 - v	Technical Co ID Resource Name 12 PhysicistU Notes WBS Definition-	Units 0	Cost Base \$0.00	eline Cost Ac \$0.00	\$0.00	\$0.00	Work Ovt. W	ork Ba Oh	oseline Work Act. I 0 h	Vork Ren 0 h	m. Work 160 h	·	·	·	
.5.3.7.2.1 - V	Technical Co ID Resource Name 12 PhysicistU Notes WBS Definition- System test; send test date	Units 0	Cost Base \$0.00	eline Cost Ac \$0.00	\$0.00	\$0.00	Work Ovt. W	ork Ba Oh	oseline Work Act. I 0 h	Vork Ren 0 h	m. Work 160 h	·	·	·	
5.3.7.2.1 - V S	Technical Co ID Resource Name	Units 0	Cost Base \$0.00	eline Cost Ac \$0.00	\$0.00	\$0.00	Work Ovt. W	ork Ba Oh	oseline Work Act. I 0 h	Vork Ren 0 h	m. Work 160 h	·	·	·	
5.3.7.2.1 - V S	Technical Co ID Resource Name 12 PhysicistU Notes WBS Definition- System test; send test dat abor BOE- Done by physicists.	Units 0	Cost Base \$0.00	eline Cost Ac \$0.00	\$0.00	\$0.00	Work Ovt. W	ork Ba Oh	oseline Work Act. I 0 h	Vork Ren 0 h	m. Work 160 h	·	·	·	
5.3.7.2.1 - V S L	Technical Co ID Resource Name	Units 0	Cost Base \$0.00	eline Cost Ac \$0.00	\$0.00	\$0.00	Work Ovt. W	ork Ba Oh	oseline Work Act. I 0 h	Vork Ren 0 h	m. Work 160 h	·	·	·	
5.3.7.2.1 - V S L D	Technical Co Resource Name PhysicistU Notes WBS Definition- System test; send test dat Labor BOE- Done by physicists. M&S BOE- NA	Units (100% a through all m	\$0.00 Base	eline Cost Ac \$0.00 / output, interfac	\$0.00	\$0.00	Work Ovt. W 160 h downloading and	ork Ba. Oh	aseline Work Act. I O h	Vork Rer 0 h	n. Work 160 h	patters (slow burst	rate only). Access to CH	not needed.	
5.3.7.2.1 - V S L D	Technical Co D Resource Name	Units (100%) a through all m mmissioning Units (100%)	cost Base \$0.00 odules, verify g, CU Effor Cost Base	eline Cost Ac \$0.00 / output, interfac	\$0.00 e with other s	\$0.00 systems, test	Work Ovt. W 160 h downloading and Thu 5/25/0 Work Ovt. W	ork Ba. O h I monitoring	g (likely can use sequence of the sequence of	Vork Rer 0 h Hencers, 155:	m. Work 160 h 3, to generate \$0.00 n. Work	·	·	·	
5.3.7.2.1 	Technical Co D Resource Name	Units (100%) a through all m mmissioning Units (100%)	So.00 Base \$0.00 odules, verify	eline Cost Ac \$0.00 / output, interfac	\$0.00 e with other s	\$0.00	Work Ovt. W 160 h downloading and	ork Ba. Oh I monitoring	g (likely can use sequ	Vork Rer 0 h	n. Work 160 h 3, to generate \$0.00	patters (slow burst	rate only). Access to CH	not needed.	
5.3.7.2.1 	Technical Co D Resource Name	Units (100%) a through all m mmissioning Units (100%)	cost Base \$0.00 odules, verify g, CU Effor Cost Base	eline Cost Ac \$0.00 / output, interfac	\$0.00 e with other s	\$0.00 systems, test	Work Ovt. W 160 h downloading and Thu 5/25/0 Work Ovt. W	ork Ba. O h I monitoring	g (likely can use sequence of the sequence of	Vork Rer 0 h Hencers, 155:	m. Work 160 h 3, to generate \$0.00 n. Work	patters (slow burst	rate only). Access to CH	not needed.	
5.3.7.2.1 \[\bar{v} \\ \text{v} \\ \text{S} \] \[\bar{v} \\ \text{N} \\ \t	Technical Co Resource Name PhysicistU Notes NBS Definition- System test; send test dat Labor BOE- Done by physicists. M&S BOE- NA Technical Co Resource Name PhysicistU Notes	Units (100%) a through all m mmissioning Units (100%)	odules, verify n, CU Effor Cost Base \$0.00	t eline Cost Ac \$0.00 to output, interface t eline Cost Ac \$0.00	\$0.00 e with other s	\$0.00 systems, test	Work Ovt. W 160 h downloading and Thu 5/25/0 Work Ovt. W 160 h	Of Balloring Bal	g (likely can use sequence of the sequence of	Vork Rer 0 h tencers, 155: Vork Rer	### 160 h 3, to generate \$0.00 ### 160 h	patters (slow burst	rate only). Access to CH	not needed.	
5.3.7.2.1 V S L D N N S 5.3.7.2.2	Technical Co D Resource Name	Units (100%) a through all m mmissioning Units (100%)	odules, verify n, CU Effor Cost Base \$0.00	t eline Cost Ac \$0.00 to output, interface t eline Cost Ac \$0.00	\$0.00 e with other s	\$0.00 systems, test	Work Ovt. W 160 h downloading and Thu 5/25/0 Work Ovt. W 160 h	Of Balloring Bal	g (likely can use sequence of the sequence of	Vork Rer 0 h tencers, 155: Vork Rer	### 160 h 3, to generate \$0.00 ### 160 h	patters (slow burst	rate only). Access to CH	not needed.	
5.3.7.2.1 V V S S S 5.3.7.2.2 V S S L C	Technical Co D Resource Name	Units (100%) a through all m mmissioning Units (100%)	odules, verify n, CU Effor Cost Base \$0.00	t eline Cost Ac \$0.00 to output, interface t eline Cost Ac \$0.00	\$0.00 e with other s	\$0.00 systems, test	Work Ovt. W 160 h downloading and Thu 5/25/0 Work Ovt. W 160 h	Of Balloring Bal	g (likely can use sequence of the sequence of	Vork Rer 0 h tencers, 155: Vork Rer	### 160 h 3, to generate \$0.00 ### 160 h	patters (slow burst	rate only). Access to CH	not needed.	
5.3.7.2.1 	Technical Co D Resource Name	Units (100%) a through all m mmissioning Units (100%)	odules, verify n, CU Effor Cost Base \$0.00	t eline Cost Ac \$0.00 to output, interface t eline Cost Ac \$0.00	\$0.00 e with other s	\$0.00 systems, test	Work Ovt. W 160 h downloading and Thu 5/25/0 Work Ovt. W 160 h	Of Balloring Bal	g (likely can use sequence of the sequence of	Vork Rer 0 h tencers, 155: Vork Rer	### 160 h 3, to generate \$0.00 ### 160 h	patters (slow burst	rate only). Access to CH	not needed.	
5.3.7.2.1	Technical Co ID Resource Name 12 PhysicistU Notes WBS Definition- System test; send test dat abor BOE- Done by physicists. M&S BOE- NA Technical Co ID Resource Name 12 PhysicistU Notes WBS Definition- System test. send test dat abor BOE- Done by physicists. M&S BOE- NA WAS BOE- NA M&S BOE- NA Resource Name 12 PhysicistU Notes Notes M&S BOE- NA ABOR BOE- NA M&S BOE- NA M&S BOE- NA M&S BOE- NA	Units 0 100% a through all m mmissioning Units 0 100% a through all m	odules, verify 7, CU Effor Cost Base \$0.00 odules, verify	t eline Cost Ac \$0.00 / output, interfac t eline Cost Ac \$0.00 / output, interfac	\$0.00 e with other s	\$0.00 systems, test	Work Ovt. W. 160 h downloading and Thu 5/25/0 Work Ovt. W. 160 h downloading and	ork Bar O h I monitoring O h O h O h I monitoring O h I monitoring O h	g (likely can use sequence of the sequence of	Vork Rer 0 h Nork Rer 0 h Nork Rer 0 h	\$0.00 n. Work 160 h	patters (slow burst \$0.00	\$0.00 t rate only). Access to CH	not needed. \$0.00	
5.3.7.2.1 \[\bar{v} \\ \text{S} \]	Technical Co ID Resource Name	Units of 100% a through all m mmissioning Units of 100% a through all m	odules, verify 7, CU Effor Cost Base \$0.00 odules, verify	t eline Cost Ac \$0.00 / output, interfac t eline Cost Ac \$0.00 / output, interfac	e with other s	\$0.00 systems, test tem. Cost \$0.00 systems, test	Work Ovt. W 160 h downloading and Thu 5/25/0 Work Ovt. W 160 h	or Band of American Band of Ba	g (likely can use sequence of the sequence of	Vork Rer 0 h Nork Rer 0 h Nork Rer 0 h	### 160 h 3, to generate \$0.00 ### 160 h	patters (slow burst	rate only). Access to CH	not needed.	
5.3.7.2.1 V S L L C L C L C L C L C L C L C L C L C	Technical Co ID Resource Name 12 PhysicistU Notes WBS Definition- System test; send test dat Labor BOE- One by physicists. M&S BOE- NA Technical Co ID Resource Name 12 PhysicistU Notes Notes Notes M&S BOE- One by physicists. M&S BOE- One by physicists. M&S BOE- One B	Units (100%) a through all m mmissioning Units (100%) a through all m	odules, verify 7, CU Effor Cost Base \$0.00 odules, verify	t eline Cost Ac \$0.00 / output, interfac t eline Cost Ac \$0.00 / output, interfac	e with other s	\$0.00 systems, test	Work Ovt. W 160 h downloading and 160 h Thu 5/25/0 Work Ovt. W 160 h downloading and	or Band of American Band of Ba	g (likely can use sequence of the sequence of	Vork Rer 0 h Nork Rer 0 h Nork Rer 0 h	\$0.00 so, to generate	patters (slow burst \$0.00	\$0.00 t rate only). Access to CH	not needed. \$0.00	
5.3.7.2.1 V S L D N N S 5.3.7.2.2	Technical Co D Resource Name	Units (100%) a through all m mmissioning Units (100%) a through all m	cost Base \$0.00 odules, verify g, CU Effor Cost Base \$0.00 odules, verify odules, verify	t t eline Cost Ac \$0.00 / output, interfac t t eline Cost Ac \$0.00 / output, interfac	so.oo e with other s ct. Cost R \$0.00 e with other s	\$0.00 systems, test tem. Cost \$0.00 systems, test	Work Ovt. W. 160 h downloading and 160 h Thu 5/25/0 Work Ovt. W. 160 h Thu 5/25/0 Work Ovt. W.	ork Ba O h I monitoring O h I monitoring	g (likely can use sequence where the sequence where	Vork Rer O h Vork Rer Uvork Rer O h Uvork Rer Vork Rer Vork Rer	\$0.00 \$0.00	patters (slow burst \$0.00	\$0.00 t rate only). Access to CH	not needed. \$0.00	
5.3.7.2.1 V S S L D N N 5.3.7.2.2 - V S 5.3.7.2.3	Technical Co ID Resource Name 12 PhysicistU Notes WBS Definition- System test; send test dat Labor BOE- One by physicists. M&S BOE- NA Technical Co ID Resource Name 12 PhysicistU Notes Notes Notes M&S BOE- One by physicists. M&S BOE- One by physicists. M&S BOE- One B	units 100% a through all m mmissioning Units 100% a through all m	odules, verify g, CU Effor Cost Base \$0.00 odules, verify odules, verify g, SUNY Ef Cost Base \$0.00	t eline Cost Ac \$0.00 / output, interfac t eline Cost Ac \$0.00 / output, interfac	so.oo e with other s ct. Cost R \$0.00 e with other s ct. Cost R \$0.00	\$0.00 systems, test dem. Cost \$0.00 systems, test	Work Ovt. W. 160 h downloading and 160 h Thu 5/25/0 Work Ovt. W. 160 h Thu 5/25/0 Work Ovt. W. 160 h	ork Ba O h I monitoring O h I monitoring I monitoring I monitoring I monitoring	Fri 6/23/06 g (likely can use sequence of the	Vork Rer 0 h Nork Rer 0 h Nork Rer 0 h Vork Rer 0 h	\$0.00 n. Work 160 h	\$0.00 spatters (slow burst	\$0.00 \$0.00	\$0.00 solution and the second solution and the second solution sol	
5.3.7.2.1 V S L D N N S 5.3.7.2.2 - V S L D N N S L D N N S L D N N N S L D N N N N N N N N N N N N N N N N N N	Technical Co ID Resource Name 12 PhysicistU Notes WBS Definition- System test; send test dat Labor BOE- One by physicists. M&S BOE- NA Technical Co ID Resource Name 12 PhysicistU Notes WBS Definition- System test, send test dat Labor BOE- One by physicists. M&S BOE- NA Technical Co ID Resource Name 12 PhysicistU Notes WBS Definition- System test, send test dat Labor BOE- One by physicists. M&S BOE- NA Technical Co ID Resource Name 12 PhysicistU Notes Notes WBS Definition- System test, send test dat Labor BOE- System test, send test dat Labor BOE- System test, send test dat Labor BOE-	units 100% a through all m mmissioning Units 100% a through all m	odules, verify g, CU Effor Cost Base \$0.00 odules, verify odules, verify g, SUNY Ef Cost Base \$0.00	t eline Cost Ac \$0.00 / output, interfac t eline Cost Ac \$0.00 / output, interfac	so.oo e with other s ct. Cost R \$0.00 e with other s ct. Cost R \$0.00	\$0.00 systems, test dem. Cost \$0.00 systems, test	Work Ovt. W. 160 h downloading and 160 h Thu 5/25/0 Work Ovt. W. 160 h Thu 5/25/0 Work Ovt. W. 160 h	ork Ba O h I monitoring O h I monitoring I monitoring I monitoring I monitoring	Fri 6/23/06 g (likely can use sequence of the	Vork Rer 0 h Nork Rer 0 h Nork Rer 0 h Vork Rer 0 h	\$0.00 n. Work 160 h	\$0.00 spatters (slow burst	\$0.00 \$0.00	\$0.00 solution and the second solution and the second solution sol	
5.3.7.2.1 V S L D N N 5.3.7.2.2 V S L D N N N N N N N N N N N N N N N N N N	Technical Co ID Resource Name 12 PhysicistU Notes WBS Definition- System test; send test dat abor BOE- Done by physicists. M&S BOE- NA Technical Co ID Resource Name 12 PhysicistU Notes WBS Definition- System test. send test dat abor BOE- Done by physicists. M&S BOE- NA Technical Co ID Resource Name 12 PhysicistU Notes Technical Co ID Resource Name 12 PhysicistU Notes NBS Definition- System test. send test dat Notes NBS Definition- System test. send test dat Notes NBS Definition- System test. send test dat	units 100% a through all m mmissioning Units 100% a through all m	odules, verify g, CU Effor Cost Base \$0.00 odules, verify odules, verify g, SUNY Ef Cost Base \$0.00	t eline Cost Ac \$0.00 / output, interfac t eline Cost Ac \$0.00 / output, interfac	so.oo e with other s ct. Cost R \$0.00 e with other s ct. Cost R \$0.00	\$0.00 systems, test dem. Cost \$0.00 systems, test	Work Ovt. W. 160 h downloading and 160 h Thu 5/25/0 Work Ovt. W. 160 h Thu 5/25/0 Work Ovt. W. 160 h	ork Ba O h I monitoring O h I monitoring I monitoring I monitoring I monitoring	Fri 6/23/06 g (likely can use sequence of the	Vork Rer 0 h Nork Rer 0 h Nork Rer 0 h Vork Rer 0 h	\$0.00 n. Work 160 h	\$0.00 spatters (slow burst	\$0.00 \$0.00	\$0.00 solution and the second solution and the second solution sol	

15.3.1.2 15.3.1.2	Total Cost	NAL Labor	&S Labor	N	M&S EQ	Finish	Fir	Start								me	N	WBS
Milestone-The technical commissioning of the PLZ ellicon track trigger to promote	\$0.00	\$0.00	\$0.00		\$0.00	23/06	Fri 6/23	/23/06	Fri 6		;	Complete	oning C	mmissio 	nical Con		Notes	.5.3.7.2.
Notes Part											r is complete	track trigge	2 silicon t	ng of the L2	mmissionin	ne technical cor	Milestone-T	
Milestone-Run lib Dretector Ready for Deam. Tue 5/30/06 Tue 5/30/06 \$0.00 \$0	\$0.00	\$0.00	\$0.00		\$0.00	28/06	Tue 3/28	/28/06	Tue 3		evatron	ption of ⁻	esump	dy for Ro	ade Read		Notes	5.4
Notice The result of the r												for beam.	d ready fo	nstalled and	upgrades ins			
Milestone-Fun IIb Detector is ready for the resumption of the Tevton. S.6.5	\$0.00	\$0.00	\$0.00		\$0.00	/30/06	Tue 5/30	/30/06	Tue 5		evatron	ption of T	esump	dy for Re	tor Read		Notes	.5.5
Notice Studies - FNAL											n.		-		-	un IIb Detector	Milestone-F	
WisS Definition- This summany task encompasses all physics commissioning of the Runtib upgrades for physics resumption.	\$0.00	\$0.00	\$0.00		\$0.00	8/9/06	Wed 8/9	/25/06	Thu 5			ioning	nmissio	ics Com	de Physi	ınlıb Upgrad		5.6
Notice Studies - Univ								١.	resumptior	des for physic	RunIIb upgra	oning of the	mmission	physics cor	passes all p		WBS Defini	
Noise Studies - Univ Discording Noise Studies - Univ Discording Noise Studies - Univ Noise Studies - Find Noise Studies - F	\$0.00	\$0.00	\$0.00		\$0.00	B/7/06	Mon 8/7	/25/06	Thu 5			g	sioning	Commiss	hysics C	yer Zero Ph		5.6.1
10 Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ort. Work Baseline Work Act. Work Rem. Work								on.	cs resumpti	or Runllb phys	Zero silicon fo	of the Layer	ioning of t	s commissi	tes physics		WBS Defini	
12	\$0.00	\$0.00	\$0.00															5.6.1.1
WBS Definition-				_									Baseline	Cost \$0.00				
Analyse noise from L0 silicon Labor BOE- Kajfasz M&S BOE- NA Noise Studies - FNAL Noise Studies - Value Noise Studie														_				
Section Sect															on	on- e from L0 silico	Analyse noi	
Noise Studies - FNAL																		
1D Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work																		
11 PhysicistF 200% \$0.00 \$0.	\$0.00	\$0.00	\$0.00		\$0.00	/23/06	Fri 6/23	5/25/06	Thu 5						- FNAL	ise Studies	N	5.6.1.2
Notes WBS Definition-				_									Baseline					
Labor BOE- Kajfasz M&S BOE- NA 5.6.1.3 Timing Studies - Univ ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work 12 PhysicistU 100% \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 Notes WBS Definition- Time in L0 Silcon Labor BOE- Juste														_		on-	Notes WBS Defini	
S.6.1.3 Timing Studies - Univ ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work 12 PhysicistU 100% \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 Notes WBS Definition- Time in L0 Silcon Labor BOE- Juste																	Labor BOE	
ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work 12 PhysicistU 100% \$0.00 \$0.00 \$0.00 40 h 0 h 0 h 0 h 40 h Notes WBS Definition- Time in L0 Silcon Labor BOE- Juste																		
12 PhysicistU 100% \$0.00 \$0.00 \$0.00 \$0.00 40 h 0 h 0 h 0 h 40 h	\$0.00	\$0.00	\$0.00		\$0.00	6/2/06	Fri 6/2	5/25/06	Thu £						s - Univ	ning Studies	Ti	5.6.1.3
WBS Definition- Time in L0 Silcon Labor BOE- Juste				-									Baseline				12 Pi	
Juste														_		on- ilcon	WBS Defini	
M&S BOE- NA																	M&S BOE- NA	
5.6.1.4 Timing Studies - FNAL Thu 5/25/06 Fri 6/2/06 \$0.00 \$0.00 \$0.00	\$0.00	\$0.00	\$0.00			6/2/06	Fri 6/2	/25/06	Thu 5					=	s - FNAL	•		5.6.1.4
ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Work Ovt. Work Baseline Work Act. Work Rem. Work 12 PhysicistU 100% \$0.00 \$0.00 \$0.00 \$0.00 40 h 0 h 0 h 40 h				_									Baseline					

WBS	Name	Start	Finish M&S EC	M&S Labor	FNAL Labor	Total Cost
"Timing S	tudies - FNAL" continued					
	Notes WBS Definition-					
	Time in L0 Silcon					
	Labor BOE- Juste					
	M&S BOE-					
	NA					
1.5.6.1.5	Alignment - Univ	Fri 6/2/06	Fri 6/30/06 \$0.00	\$0.00	\$0.00	\$0.00
	ID Resource Name Units Cost Baseline Cost Act. Cost	Rem. Cost Work Ovt. Work Bas	eline Work Act. Work Rem. Work	<u></u>	ψ0.00	ψο.σσ
	12 PhysicistU 100% \$0.00 \$0.00 \$0.00 Notes	\$0.00 160 h 0 h	0 h 0 h 160 i	h		
	WBS Definition- Align L0 silicon					
	Labor BOE-					
	Borissov, Lancaster					
	M&S BOE-					
	NA					
1.5.6.1.6	Alignment - FNAL	Fri 6/2/06	Fri 6/30/06 \$0.00	\$0.00	\$0.00	\$0.00
	ID Resource Name Units Cost Baseline Cost Act. Cost 11 PhysicistF 100% \$0.00 \$0.00 \$0.00	Rem. Cost Work Ovt. Work Bas \$0.00 160 h 0 h	eline Work Act. Work Rem. Work	h		
	Notes	*****				
	WBS Definition- Align L0 silicon					
	Labor BOE-					
	Borissov, Lancaster					
	M&S BOE- NA					
1.5.6.1.7	Clustering Studies - Univ	Fri 6/23/06	Mon 8/7/06 \$0.00	\$0.00	\$0.00	\$0.00
	ID Resource Name Units Cost Baseline Cost Act. Cost 12 PhysicistU 100% \$0.00 \$0.00 \$0.00	Rem. Cost Work Ovt. Work Bas \$0.00 240 h 0 h	eline Work Act. Work Rem. Work 0 h 0 h 240	h		
	Notes WBS Definition-					
	Perform clustering studies with L0 added to existing silicon					
	Labor BOE-					
	Khanov, Kulik					
	M&S BOE- NA					
1.5.6.1.8	Clustering Studies - FNAL ID Resource Name Units Cost Baseline Cost Act. Cost	Fri 6/23/06 Rem. Cost Work Ovt. Work Bas	Mon 8/7/06 \$0.00 eline Work	\$0.00	\$0.00	\$0.00
	11 PhysicistF 100% \$0.00 \$0.00 \$0.00	\$0.00 240 h 0 h	0 h 0 h 240	h		
	Notes WBS Definition-					
	Perform clustering studies with L0 added to existing silicon					
	Labor BOE- Khanov, Kulik					
	M&S BOE-					
	NA					
1.5.6.1.9	Tracking Studies - Univ	Fri 6/23/06	Mon 8/7/06 \$0.00	\$0.00	\$0.00	\$0.00
1.0.0.1.9	ID Resource Name Units Cost Baseline Cost Act. Cost	Rem. Cost Work Ovt. Work Bas	eline Work Act. Work Rem. Work	<u></u>	ψυ.υυ	ψ0.00
	12 PhysicistU 100% \$0.00 \$0.00 \$0.00	\$0.00 240 h 0 h	0 h 0 h 240 i	h		
	Notes WBS Definition-					
	Perform tracking studies adding L0 silicon to existing silicon.					

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/BS		Name				Start	Finish	M&S EQ	M&S Labor	FNAL Labor	Total Cost	
racking		- Univ" continued										
	Notes											
	Labor Bo Zdrazil	OE-										
	M&S BC	DE-										
	NA	<i>-</i>										
50440		Tarabia a Otabia - Et	101			F-: 0/00/00	M 0/7/00	#0.00	#0.00	#0.00	# 0.00	
.5.6.1.10	ID	Tracking Studies - Fi		line Cost Act. C	ost Rem. Cost	Fri 6/23/06 Work Ovt. Work	Mon 8/7/06 Baseline Work Act. Work	\$0.00 Rem. Work	\$0.00	\$0.00	\$0.00	
	11	PhysicistF 1009			\$0.00 \$0.00	240 h 0 h		240 h				
	Notes WBS De	ofinition										
		tracking studies adding L0	silicon to existing si	ilicon.								
	Labor Bo	OE-										
	Zdrazil											
	M&S BC NA	DE-										
	INA											
5.6.1.11		Physics Objects (Ve	e's, etc) - Univ			Fri 6/23/06	Mon 8/7/06	\$0.00	\$0.00	\$0.00	\$0.00	
	ID	Resource Name Units		line Cost Act. C		Work Ovt. Work	Baseline Work Act. Work	Rem. Work				
	12 Notes	PhysicistU 1009	\$0.00	\$0.00	\$0.00 \$0.00	240 h 0 h	0 h 0 h	240 h				
	WBS De	efinition-										
	WBS De	efinition- physics objects having trac	k hits in L0 silicon.									
	WBS De	physics objects having trac	k hits in L0 silicon.									
	WBS De Analyze Labor B0	physics objects having trad OE-	k hits in L0 silicon.									
	WBS De Analyze	physics objects having trad OE-	k hits in L0 silicon.									
F C 1 12	WBS De Analyze Labor Bo M&S BC NA	physics objects having trad OE- DE-				Fri c/22/00	Man 9/7/00	\$0.00	\$0.00	фо. oo	\$0.00	
5.6.1.12	WBS De Analyze Labor B0 M&S BC NA	physics objects having trace OE- DE- Physics Objects (Vee	e's, etc) - FNAL	line Cost Act C	ost Rem Cost	Fri 6/23/06	Mon 8/7/06 Raseline Work Act Work	\$0.00	\$0.00	\$0.00	\$0.00	
5.6.1.12	WBS De Analyze Labor Bo M&S BC NA	physics objects having trad OE- DE-	s's, etc) - FNAL Cost Basel	line Cost Act. C \$0.00	ost Rem. Cost 50.00 \$0.00	Fri 6/23/06 Work Ovt. Work 240 h 0 h	Baseline Work Act. Work	\$0.00 Rem. Work 240 h	\$0.00	\$0.00	\$0.00	
5.6.1.12	WBS De Analyze Labor BC M&S BC NA	Physics Objects (Vec Resource Name Units PhysicstF 1009	s's, etc) - FNAL Cost Basel			Work Ovt. Work	Baseline Work Act. Work	Rem. Work	\$0.00	\$0.00	\$0.00	
5.6.1.12	WBS De Analyze Labor BC M&S BC NA ID 11 Notes WBS De	Physics Objects (Vec Resource Name Units PhysicstF 1009	e's, etc) - FNAL Cost Basel 5 \$0.00			Work Ovt. Work	Baseline Work Act. Work	Rem. Work	\$0.00	\$0.00	\$0.00	
5.6.1.12	WBS De Analyze Labor BC M&S BC NA ID 11 Notes WBS De	Physics Objects (Vec Resource Name Units PhysicistF 1009	e's, etc) - FNAL Cost Basel 5 \$0.00			Work Ovt. Work	Baseline Work Act. Work	Rem. Work	\$0.00	\$0.00	\$0.00	
5.6.1.12	WBS De Analyze Labor B0 M&S BC NA ID 11 Notes WBS De Analyze Labor B0	Physics Objects (Vec Resource Name Units PhysicistF 1009 efinition- physics objects having trace	e's, etc) - FNAL Cost Basel 5 \$0.00			Work Ovt. Work	Baseline Work Act. Work	Rem. Work	\$0.00	\$0.00	\$0.00	
5.6.1.12	WBS De Analyze Labor BO M&S BO NA ID 11 Notes WBS De Analyze	Physics Objects (Vec Resource Name Units PhysicistF 1009 efinition- physics objects having trace	e's, etc) - FNAL Cost Basel 5 \$0.00			Work Ovt. Work	Baseline Work Act. Work	Rem. Work	\$0.00	\$0.00	\$0.00	
5.6.1.12	WBS De Analyze Labor B0 M&S BC NA ID 11 Notes WBS De Analyze Labor B0 M&S BC	Physics Objects (Vec Resource Name Units PhysicistF 1009 efinition- physics objects having trace	e's, etc) - FNAL Cost Basel 5 \$0.00			Work Ovt. Work	Baseline Work Act. Work	Rem. Work	\$0.00	\$0.00	\$0.00	
	WBS De Analyze Labor Br M&S BC NA ID 11 Notes WBS De Analyze Labor Br M&S BC NA	Physics Objects (Vec Resource Name Units PhysicistF 1009 efinition- physics objects having trace	e's, etc) - FNAL Cost Basel 5 \$0.00 k hits in L0 silicon.	\$0.00		Work Ovt. Work	Baseline Work Act. Work	Rem. Work	\$0.00	\$0.00	\$0.00	
	WBS De Analyze Labor B0 M&S BC NA ID 11 Notes WBS De Analyze Labor B0 M&S BC NA	Physics Objects (Vec Resource Name Units PhysicistF 1009 Efinition- physics objects having trac OE- DE-	e's, etc) - FNAL Cost Basel 5 \$0.00 k hits in L0 silicon.	\$0.00		Work Ovt. Work 240 h O h	Baseline Work Act. Work 0 h 0 h	Rem. Work 240 h				
	WBS De Analyze Labor B0 M&S BC NA ID 11 Notes WBS De Analyze Labor B0 M&S BC NA	Physics Objects (Vec Resource Name Units PhysicistF 1009 Efinition- physics objects having trac OE- DE-	e's, etc) - FNAL Cost Basel So.00 k hits in L0 silicon.	\$0.00 :	\$0.00	Work Ovt. Work 240 h 0 h	Baseline Work Act. Work 0 h 0 h	Rem. Work 240 h				
5.6.1.13	WBS De Analyze Labor B0 M&S BC NA ID 11 Notes WBS De Analyze Labor B0 M&S BC NA	Physics Objects (Vec Resource Name Units PhysicistF 1009 effinition- physics objects having trace OE- DE-	o's, etc) - FNAL Cost Basel s \$0.00 k hits in L0 silicon. or Runllb Physi unllb physics. Note of	\$0.00 ics clustering, tracking	\$0.00	Work Ovt. Work 240 h 0 h	Baseline Work Act. Work 0 h 0 h	Rem. Work 240 h				
5.6.1.13	WBS De Analyze Labor Brown M&S BC NA ID 11 Notes WBS De Analyze Labor Brown M&S BC NA Notes WBS De Mileston Notes	Physics Objects (Vec- Resource Name Units PhysicistF 1009 effinition- OE- DE- Layer Zero Ready for Efficition is ready for R L1 Cal Trig Physics	o's, etc) - FNAL Cost Basel s \$0.00 k hits in L0 silicon. or Runllb Physi unllb physics. Note of	\$0.00 ics clustering, tracking	\$0.00	Work Ovt. Work 240 h 0 h Mon 8/7/06 edn't be completed.	Baseline Work Act. Work 0 h 0 h	Rem. Work 240 h	\$0.00	\$0.00	\$0.00	
5.6.1.13	WBS De Analyze Labor Bo NA ID	Physics Objects (Vec- Resource Name Units PhysicistF 1009 efinition- DE- Layer Zero Ready for finition ne- LO Silicon is ready for R: L1 Cal Trig Physics efinition- efinition finition fini	e's, etc) - FNAL Cost Basel s \$0.00	\$0.00 ics clustering, tracking	g, physics objects ne	Mon 8/7/06 Mon 8/7/06 Wed 6/7/06	Baseline Work Act. Work 0 h 0 h	Rem. Work 240 h	\$0.00	\$0.00	\$0.00	
5.6.1.13	WBS De Analyze Labor Bo NA ID	Physics Objects (Vec- Resource Name Units PhysicistF 1009 effinition- OE- DE- Layer Zero Ready for Efficition is ready for R L1 Cal Trig Physics	e's, etc) - FNAL Cost Basel s \$0.00	\$0.00 ics clustering, tracking	g, physics objects ne	Mon 8/7/06 Mon 8/7/06 Wed 6/7/06	Baseline Work Act. Work 0 h 0 h	Rem. Work 240 h	\$0.00	\$0.00	\$0.00	
5.6.1.12 5.6.1.13 5.6.2	WBS De Analyze Labor Bo NA ID	Physics Objects (Vec- Resource Name Units PhysicistF 1009 efinition- physics objects having trace OE- DE- Layer Zero Ready for efinition- ne- L0 Silicon is ready for R L1 Cal Trig Physics efinition- mmary task completes physics	e's, etc) - FNAL Cost Basel 5 \$0.00 Ik hits in L0 silicon. Pr Runllb Physi unllb physics. Note of Commissioning of Commis	\$0.00 ics clustering, tracking	g, physics objects ne	Mon 8/7/06 Mon 8/7/06 Medn't be completed. Wed 6/7/06 sumption.	Baseline Work	\$0.00	\$0.00 \$0.00	\$0.00	\$0.00 \$0.00	
5.6.1.13	WBS De Analyze Labor Bo NA ID	Physics Objects (Vec- Resource Name Units PhysicistF 1009 efinition- DE- Layer Zero Ready for finition ne- LO Silicon is ready for R: L1 Cal Trig Physics efinition- efinition finition fini	e's, etc) - FNAL Cost Basel 5 \$0.00 It hits in L0 silicon. Pr Runllb Physi unllb physics. Note of Commissioning of Commissioning of Commissioning of Commissioning of Commissioning - University - Universit	\$0.00 ics clustering, tracking	g, physics objects ne	Mon 8/7/06 Mon 8/7/06 Wed 6/7/06	Baseline Work Act. Work 0 h 0 h	Rem. Work 240 h	\$0.00	\$0.00	\$0.00	

WBS Definition- Verify physics trigger rates, efficiencies, purities with collider data. Perform noise studies. Make final tuning of ADF coefficients to give correct Trigger Tower response. Make final check of certification of L1 Cal trigger.

M&S BOE-NA

Labor BOE- Runlla experience. When University/Fermilab division of labor known, specific personnel, Universities, will be identified.

VBS		Name							Start		inish	M&S EQ	M&S Labor	FNAL Labor	Total Cost	
5.6.2.2		L1 Cal Physic			Fermilab			Wed	6/7/06	Wed 8	/9/06	\$0.00	\$0.00	\$0.00	\$0.00	
		Resource Name PhysicistF	Units 400%	\$0.00	Baseline Cost \$0.00	Act. Cost \$0.00	Rem. Cost \$0.00	Work 1,440 h	Ovt. Work 0 h	Baseline Work 0 h	Act. Work 0 h	Rem. Work 1,440 h				
	Notes	Titysicisa	40070	φ0.00	φο.σο	φ0.00	ψ0.00	1,44011	011	011	011	1,44011				
		finition- Verify phy	sics trigger i	ates, efficie	encies, purities v	vith collider da	ata. Perform no	ise studies.	Make final tur	ning of ADF coeffi	eients to give o	orrect Trigger Tov	ver response. Make fi	nal check of certification	of L1 Cal trigger.	
	Labor BO	DE- Runlla experie	ence. When	University/f	ermilab division	of labor know	vn. specific per	sonnel. Univ	versities, will b	oe identified.						
	M&S BOE						, , , , , , , , , , , , , , , , , , , ,	, .								
	NA NA	L-														
.5.6.2.3		L1 Cal Trig R	andy for	Dunlih D	hydiad			Wod	8/9/06	Wed 8	IOIOE	\$0.00	\$0.00	\$0.00	\$0.00	
.5.0.2.5	Notes	Li Cai iligik	eauy ioi	Kullib F	ilysics			weu	0/3/00	wed	19100	\$0.00	\$0.00	φ0.00	φυ.υυ	
	WBS Def			-	No. of the Property of	. I P										
	Milestone	e- L1 Cal Trig is re	ady for Run	IID physics.	Note sliding wir	ndow studies i	neean't be com	pietea.								
.5.6.3		L1 TrackMate	h Physic	s Comm	issioning			Thu	6/8/06	Fri 9	/4/06	\$0.00	\$0.00	\$0.00	\$0.00	
.0.0.0	Notes	L. Haokiviate	1 11,310	0011111	locioning				3,0,00		,-00	ψ0.00	Ψ0.00	ψ0.00	ψ0.00	
	WBS Def	finition- mary task comple	tee physics	- commission	ning of the L1Co	l Track motob	for Punilly phy	eice raeumn	otion							
	i ilis Suffil	mary task comple	ies priysics	001111111111111111111111111111111111111	iiig oi ule LiCa	ii i i aun IIIaiCI	i ioi raillib þhy	aica resump	Juoli.							
.5.6.3.1		Study L1 Cal	Track/Mat	ch Trigge	ers In Detail -	Univ		Thu	6/8/06	Fri 8	/4/06	\$0.00	\$0.00	\$0.00	\$0.00	
		Resource Name PhysicistU	Units 200%	Cost \$0.00	Baseline Cost \$0.00	Act. Cost \$0.00	Rem. Cost \$0.00	Work 640 h	Ovt. Work	Baseline Work	Act. Work	Rem. Work 640 h				
	Notes	i ilyaidiaid	20070	φυ.υυ	φυ.υυ	φυ.υυ	φυ.υυ	0 4 011	UII	0 n	UII	040 11				
		finition-		_												
	Measure Labor BO M&S BOB	rates, efficiencies DE-two physicists E-								-	itified.					
	Measure Labor BO	DE-two physicists								-	itified.					
.5.6.3.2	Measure Labor BO M&S BOE NA	DE-two physicists · E- Study L1 Cal	working full	time. When	University/Ferm	nilab division o	of labor known,	specific pers	rsonnel, Unive	- rrsities, will be ider Fri 8	/4/06	\$0.00	\$0.00	\$0.00	\$0.00	
5.6.3.2	Measure Labor BO M&S BOE NA	DE-two physicists E- Study L1 Cal Resource Name	working full	ch Trigge	University/Ferm ers In Detail - Baseline Cost	FNAL Act. Cost	of labor known,	specific person	rsonnel, Unive	rsities, will be ider	/4/06 Act. Work	Rem. Work	\$0.00	\$0.00	\$0.00	
.5.6.3.2	Measure Labor BO M&S BOE NA	DE-two physicists · E- Study L1 Cal	working full	time. When	University/Ferm	nilab division o	of labor known,	specific pers	rsonnel, Unive	- rrsities, will be ider Fri 8	/4/06	•	\$0.00	\$0.00	\$0.00	
.5.6.3.2	Measure Labor BO M&S BOB NA ID 11 Notes WBS Defi	Study L1 Cal Resource Name PhysicistF	Frack/Mat	ch Trigge	University/Ferm ers In Detail - Baseline Cost \$0.00	FNAL Act. Cost	Rem. Cost	Thu Work 320 h	6/8/06 Ovt. Work	Fri & Baseline Work	/4/06 Act. Work	Rem. Work	\$0.00	\$0.00	\$0.00	
.5.6.3.2	Measure Labor BO M&S BOE NA ID 11 Notes WBS Def Measure	Study L1 Cal Resource Name PhysicistF Finition-rates, efficiencies	Frack/Mat Units 100% , purities (C	ch Trigge Cost \$0.00 TM vs L1C	ers In Detail - Baseline Cost \$0.00 al, CTM vs L1CT	FNAL Act. Cost \$0.00	Rem. Cost \$0.00	Thu Work 320 h	1 6/8/06 Ovt. Work 0 h	Fri & Baseline Work 0 h	/4/06 Act. Work 0 h	Rem. Work	\$0.00	\$0.00	\$0.00	
.5.6.3.2	Measure Labor BO M&S BOE NA ID 11 Notes WBS Def Measure	Study L1 Cal Resource Name PhysicistF	Frack/Mat Units 100% , purities (C	ch Trigge Cost \$0.00 TM vs L1C	ers In Detail - Baseline Cost \$0.00 al, CTM vs L1CT	FNAL Act. Cost \$0.00	Rem. Cost \$0.00	Thu Work 320 h	1 6/8/06 Ovt. Work 0 h	Fri & Baseline Work 0 h	/4/06 Act. Work 0 h	Rem. Work	\$0.00	\$0.00	\$0.00	
.5.6.3.2	Measure Labor BO M&S BOE NA ID 11 Notes WBS Defi Measure Labor BO	Study L1 Cal Resource Name PhysicistF finition- rates, efficiencies DE-two physicists	Frack/Mat Units 100% , purities (C	ch Trigge Cost \$0.00 TM vs L1C	ers In Detail - Baseline Cost \$0.00 al, CTM vs L1CT	FNAL Act. Cost \$0.00	Rem. Cost \$0.00	Thu Work 320 h	1 6/8/06 Ovt. Work 0 h	Fri & Baseline Work 0 h	/4/06 Act. Work 0 h	Rem. Work	\$0.00	\$0.00	\$0.00	
5.6.3.2	Measure Labor BO M&S BOE NA ID 11 Notes WBS Def Measure	Study L1 Cal Resource Name PhysicistF finition- rates, efficiencies DE-two physicists	Frack/Mat Units 100% , purities (C	ch Trigge Cost \$0.00 TM vs L1C	ers In Detail - Baseline Cost \$0.00 al, CTM vs L1CT	FNAL Act. Cost \$0.00	Rem. Cost \$0.00	Thu Work 320 h	1 6/8/06 Ovt. Work 0 h	Fri & Baseline Work 0 h	/4/06 Act. Work 0 h	Rem. Work	\$0.00	\$0.00	\$0.00	
.5.6.3.2	Measure Labor BO M&S BOE NA ID 11 Notes WBS Defi Measure Labor BO M&S BOE	Study L1 Cal Resource Name PhysicistF finition- rates, efficiencies DE-two physicists	Frack/Mat Units 100% , purities (C	ch Trigge Cost \$0.00 TM vs L1C	ers In Detail - Baseline Cost \$0.00 al, CTM vs L1CT	FNAL Act. Cost \$0.00	Rem. Cost \$0.00	Thu Work 320 h	1 6/8/06 Ovt. Work 0 h	Fri & Baseline Work 0 h	/4/06 Act. Work 0 h	Rem. Work	\$0.00	\$0.00	\$0.00	
	Measure Labor BO M&S BOE NA ID 11 Notes WBS Defi Measure Labor BO M&S BOE NA	Study L1 Cal Resource Name PhysicistF finition-rates, efficiencies DE-two physicists	Frack/Mat Units 100% , purities (C	ch Trigge Cost \$0.00 — TM vs L1Ca	ers In Detail - Baseline Cost \$0.00 al, CTM vs L1C1 University/Ferm	FNAL Act. Cost \$0.00 TT, taus?). Co	Rem. Cost \$0.00	Thu Work 320 h	1 6/8/06 Ovt. Work O h rms; iterate ale	Fri & Baseline Work Oh gorithms;	/4/06 Act. Work 0 h	Rem. Work 320 h	·	·		
	Measure Labor BO M&S BOE NA ID 11 Notes WBS Defi Measure Labor BO M&S BOE NA	Study L1 Cal Resource Name PhysicistF finition- rates, efficiencies DE-two physicists	Frack/Mat Units 100% , purities (C	ch Trigge Cost \$0.00 — TM vs L1Ca	ers In Detail - Baseline Cost \$0.00 al, CTM vs L1C1 University/Ferm	FNAL Act. Cost \$0.00 TT, taus?). Co	Rem. Cost \$0.00	Thu Work 320 h	1 6/8/06 Ovt. Work 0 h	Fri & Baseline Work Oh gorithms;	/4/06 Act. Work 0 h	Rem. Work	\$0.00	\$0.00	\$0.00 \$0.00	
	Measure Labor BO M&S BOE NA ID 11 Notes WBS Defi Measure Labor BO M&S BOE NA	Study L1 Cal ** Resource Name Physicists* finition-rates, efficiencies DE-two physicists* E- L1 Cal Track finition	Frack/Mat Units 100% , purities (C working full	ch Trigge Cost \$0.00 TM vs L1Ci	ers In Detail - Baseline Cost \$0.00 al, CTM vs L1C1 University/Ferm	FNAL Act. Cost \$0.00 TT, taus?). Co nilab division of	Rem. Cost \$0.00	Thu Work 320 h	1 6/8/06 Ovt. Work O h rms; iterate ale	Fri & Baseline Work Oh gorithms;	/4/06 Act. Work 0 h	Rem. Work 320 h	·	·		
	Measure Labor BO M&S BOE NA ID 11 Notes WBS Defi Measure Labor BO M&S BOE NA	Study L1 Cal Resource Name PhysicistF finition- rates, efficiencies DE-two physicists E- L1 Cal Track	Frack/Mat Units 100% , purities (C working full	ch Trigge Cost \$0.00 TM vs L1Ci	ers In Detail - Baseline Cost \$0.00 al, CTM vs L1C1 University/Ferm	FNAL Act. Cost \$0.00 TT, taus?). Co nilab division of	Rem. Cost \$0.00	Thu Work 320 h	1 6/8/06 Ovt. Work O h rms; iterate ale	Fri & Baseline Work Oh gorithms;	/4/06 Act. Work 0 h	Rem. Work 320 h	·	·		
	Measure Labor BO M&S BOE NA ID 11 Notes WBS Defi Measure Labor BO M&S BOE NA	Study L1 Cal ** Resource Name Physicists* finition-rates, efficiencies DE-two physicists* E- L1 Cal Track finition	Frack/Mat Units 100% , purities (C working full	ch Trigge Cost \$0.00 TM vs L1Ci	ers In Detail - Baseline Cost \$0.00 al, CTM vs L1C1 University/Ferm	FNAL Act. Cost \$0.00 TT, taus?). Co nilab division of	Rem. Cost \$0.00	Thu Work 320 h	1 6/8/06 Ovt. Work O h rms; iterate ale	Fri & Baseline Work Oh gorithms;	/4/06 Act. Work 0 h	Rem. Work 320 h	·	·		
.5.6.3.3	Measure Labor BO M&S BOE NA ID 11 Notes WBS Def Measure Labor BO NA Notes WBS Def Milestone	Study L1 Cal ** Resource Name Physicists* finition-rates, efficiencies DE-two physicists* E- L1 Cal Track finition	Frack/Mat Units 100% purities (C working full	ch Trigge Cost \$0.00 TM vs L1Citime. When ady for F	ers In Detail - Baseline Cost \$0.00 al, CTM vs L1CT University/Ferm	FNAL Act. Cost \$0.00 TT, taus?). Co nilab division of	Rem. Cost \$0.00	Thu Work 320 h sics CTM ter specific per:	1 6/8/06 Ovt. Work O h rms; iterate ale	Fri & Baseline Work Oh gorithms;	/4/06 Act. Work 0 h attified.	Rem. Work 320 h	·	·		
.5.6.3.3	Measure Labor BO M&S BOE NA ID 11 Notes WBS Defi Measure Labor BO M&S BOE NA Notes WBS Defi Milestone	Study L1 Cal ** Resource Name Physicists* finition-rates, efficiencies DE-two physicists ** E- L1 Cal Track finition L1 Cal Trig is re	Frack/Mat Units 100% purities (C working full	ch Trigge Cost \$0.00 TM vs L1Citime. When ady for F	ers In Detail - Baseline Cost \$0.00 al, CTM vs L1CT University/Ferm	FNAL Act. Cost \$0.00 TT, taus?). Co nilab division of	Rem. Cost \$0.00	Thu Work 320 h sics CTM ter specific per:	16/8/06 Ovt. Work O h rms; iterate ale	Fri 8	/4/06 Act. Work 0 h attified.	Rem. Work 320 h	\$0.00	\$0.00	\$0.00	
5.6.3.3	Measure Labor BO M&S BOE NA ID 11 Notes WBS Defi Measure Labor BO NA Notes WBS Defi Milestone Notes WBS Defi Milestone	Study L1 Cal Resource Name Physicists Entire Track finition	Frack/Mat Units 100% purities (C working full	ch Trigge Cost \$0.00 TM vs L1Citime. When ady for F Illb physics.	ers In Detail - Baseline Cost \$0.00 al, CTM vs L1CT University/Ferm Runllb Physi Note sliding wir	FNAL Act. Cost \$0.00 TT, taus?). Co milab division of	Rem. Cost \$0.00 enverge on physof labor known,	Thu Work 320 h sics CTM ter specific pers	16/8/06 Ovt. Work O h rms; iterate ale	Fri 8	/4/06 Act. Work 0 h attified.	Rem. Work 320 h	\$0.00	\$0.00	\$0.00	
.5.6.3.3	Measure Labor BO M&S BOE NA ID 11 Notes WBS Defi Measure Labor BO NA Notes WBS Defi Milestone Notes WBS Defi Milestone	Study L1 Cal ** Resource Name Physicists* finition-rates, efficiencies DE-two physicists ** E- L1 Cal Track finition L1 Cal Trig is re	Frack/Mat Units 100% purities (C working full	ch Trigge Cost \$0.00 TM vs L1Citime. When ady for F Illb physics.	ers In Detail - Baseline Cost \$0.00 al, CTM vs L1CT University/Ferm Runllb Physi Note sliding wir	FNAL Act. Cost \$0.00 TT, taus?). Co milab division of	Rem. Cost \$0.00 enverge on physof labor known,	Thu Work 320 h sics CTM ter specific pers	16/8/06 Ovt. Work O h rms; iterate ale	Fri 8	/4/06 Act. Work 0 h attified.	Rem. Work 320 h	\$0.00	\$0.00	\$0.00	
5.6.3.3	Measure Labor BO M&S BOE NA ID 11 Notes WBS Defi Measure Labor BO M&S BOE NA Notes WBS Defi Milestone Notes WBS Defi Milestone	Study L1 Cal ** Resource Name Physicists* Finition-mary task comple	Frack/Mat Units 100% purities (C working full Match re ady for Run cs Comm	ch Trigge Cost \$0.00 TM vs L1Ci time. When ady for F Illb physics.	University/Ferm Pers In Detail - Baseline Cost \$0.00 al, CTM vs L1C1 University/Ferm Runllb Physi Note sliding wir	FNAL Act. Cost \$0.00 TT, taus?). Co nilab division of the cost o	Rem. Cost \$0.00 enverge on physof labor known,	Thu Work 320 h Sics CTM ter specific pers Fri pleted. Wed 5	1 6/8/06 Ovt. Work 0 h rms; iterate algorisation, University 18/4/06	Fri 8 Baseline Work O h gorithms; striities, will be identified.	/4/06 Act. Work 0 h titified.	\$0.00	\$0.00	\$0.00	\$0.00	
.5.6.3.2 .5.6.3.3	Measure Labor BO M&S BOE NA ID 11 Notes WBS Defi Measure Labor BO M&S BOE NA Notes WBS Defi Milestone Notes WBS Defi This sumi	Study L1 Cal Resource Name Physicists Entire Track finition	Frack/Mat Units 100% purities (C working full Match re ady for Run cs Comm	ch Trigge Cost \$0.00 TM vs L1Citime. When ady for F Illb physics. issionin commission Triggers	University/Ferm Pers In Detail - Baseline Cost \$0.00 al, CTM vs L1C1 University/Ferm Runllb Physi Note sliding wir	FNAL Act. Cost \$0.00 TT, taus?). Co nilab division of the cost o	Rem. Cost \$0.00 enverge on physof labor known,	Thu Work 320 h Sics CTM ter specific periods Fri pleted. Wed 5	16/8/06 Ovt. Work O h rms; iterate ale	Fri 8	/4/06 Act. Work 0 h titified.	Rem. Work 320 h	\$0.00	\$0.00	\$0.00	

VBS	Name	Start	Finish	M&S EQ	M&S Labor	FNAL Labor	Total Cost
	Central Track Triggers In Detail - Univ" continued			·			
	Notes WBS Definition-						
	Study L1Central Track Triggers with L1CTT only Triggers in detail.						
	Labor BOE-When University/Fermilab division of labor known, specific personnel, Universitie	s, will be identified.					
	M&S BOE-						
	NA						
.5.6.4.2	Study L1 Central Track Triggers In Detail - FNAL	Wed 5/31/06	Wed 8/2/06	\$0.00	\$0.00	\$0.00	\$0.00
	ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost 11 PhysicistF 100% \$0.00 \$0.00 \$0.00 \$0.00		Baseline Work Act. Work 0 h 0 h	Rem. Work 360 h			
	Notes						
	WBS Definition- Study L1Central Track Triggers with L1CTT only Triggers in detail.						
	Labor BOE-When University/Fermilab division of labor known, specific personnel, Universitie	a will be identified					
	Labor BOE-when University/Fermilab division or labor known, specific personner, Universite	s, will be identified.					
	M&S BOE-						
	NA						
5.6.4.3	L1 Central Track Trigger ready for Runllb Physics	Wed 8/2/06	Wed 8/2/06	\$0.00	\$0.00	\$0.00	\$0.00
	Notes WBS Definition						
	Milestone- L1 Cal Trig is ready for Runllb physics. Note sliding window studies needn't be co	mpleted.					
5.6.5	L2 Beta Physics Commissioning	Fri 6/23/06	Mon 7/24/06	\$0.00	\$0.00	\$0.00	\$0.00
5.6.5	Lz Deta i nysics commissioning	FII 0/23/00	Mon 7/31/06	Ψ0.00	Ψ0.00	Ψ0.00	ψ0.00
5.0.5	Notes	FII 0/23/00	WOII 7/31/00	ψ0.00	ψ0.00	\$0.00	φυ.υυ
.5.6.5			WIOTI 7/31/06	ψ0.00	ψ0.00	ψοσ	φ0.00
.5.6.5	Notes WBS Definition-		WOII 7/31/06	ψ0.00	φ0.00	φιιου	\$0.00
	Motes WBS Definition- This summary task completes physics commissioning of the L2 Beta for Runllb physics resur		Mon 7/31/06	\$0.00	\$0.00	\$0.00	\$0.00
.5.6.5.1	Notes WBS Definition- This summary task completes physics commissioning of the L2 Beta for Runllb physics result Verify Function of New Features - Univ ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost	mption. Fri 6/23/06 Work Ovt. Work B	Mon 7/31/06 Baseline Work Act. Work	\$0.00 Rem. Work			
	Notes	mption. Fri 6/23/06 Work Ovt. Work B	Mon 7/31/06	\$0.00			
	Notes	mption. Fri 6/23/06 Work Ovt. Work B	Mon 7/31/06 Baseline Work Act. Work	\$0.00 Rem. Work			
	Notes WBS Definition- This summary task completes physics commissioning of the L2 Beta for RunlIb physics result Verify Function of New Features - Univ ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost 12 PhysicistU 50% \$0.00 \$0.00 \$0.00 \$0.00 Notes	mption. Fri 6/23/06 Work Ovt. Work B	Mon 7/31/06 Baseline Work Act. Work	\$0.00 Rem. Work			
	Notes	Fri 6/23/06 Work Ovt. Work E	Mon 7/31/06 Baseline Work Act. Work	\$0.00 Rem. Work			
	Notes	Fri 6/23/06 Work Ovt. Work E	Mon 7/31/06 Baseline Work Act. Work	\$0.00 Rem. Work			
	Notes	Fri 6/23/06 Work Ovt. Work E	Mon 7/31/06 Baseline Work Act. Work	\$0.00 Rem. Work			
	Notes	Fri 6/23/06 Work Ovt. Work E	Mon 7/31/06 Baseline Work Act. Work	\$0.00 Rem. Work			
.5.6.5.1	World Worl	Fri 6/23/06 Work Ovt. Work E 100 h 0 h s, will be identified.	Mon 7/31/06 Saseline Work Act. Work Oh Oh	\$0.00 Rem. Work 100 h	\$0.00	\$0.00	\$0.00
5.6.5.1	Notes	Fri 6/23/06 Work Ovt. Work E 100 h 0 h s, will be identified.	Mon 7/31/06 Baseline Work Act. Work	\$0.00 Rem. Work			
5.6.5.1	Notes	Fri 6/23/06 Work Ovt. Work E 100 h 0 h s, will be identified.	Mon 7/31/06 Saseline Work Act. Work O h O h Mon 7/31/06	\$0.00 Rem. Work 100 h	\$0.00	\$0.00	\$0.00
5.6.5.1	Notes	Fri 6/23/06 Work Ovt. Work E 100 h 0 h s, will be identified. Fri 6/23/06 Work Ovt. Work E	Mon 7/31/06 3aseline Work Act. Work 0 h 0 h Mon 7/31/06 3aseline Work Act. Work	\$0.00 Rem. Work 100 h	\$0.00	\$0.00	\$0.00
5.6.5.1	Notes	Fri 6/23/06 Work Ovt. Work E 100 h 0 h s, will be identified. Fri 6/23/06 Work Ovt. Work E	Mon 7/31/06 3aseline Work Act. Work 0 h 0 h Mon 7/31/06 3aseline Work Act. Work	\$0.00 Rem. Work 100 h	\$0.00	\$0.00	\$0.00
.5.6.5.1	Verify Function of New Features - Univ D Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Verify Function of New Features - Univ D Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost 12 PhysicistU 50% \$0.00 \$0.0	Fri 6/23/06 Work Ovt. Work E 100 h O h S, will be identified. Fri 6/23/06 Work Ovt. Work E 100 h O h	Mon 7/31/06 3aseline Work Act. Work 0 h 0 h Mon 7/31/06 3aseline Work Act. Work	\$0.00 Rem. Work 100 h	\$0.00	\$0.00	\$0.00
	Verify Function of New Features - Univ ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Verify Function of New Features - Univ ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Verify Function of New Features - In Verify Function of New Features: trigger bit expansion, etc. Labor BOE-When University/Fermilab division of labor known, specific personnel, Universitie	Fri 6/23/06 Work Ovt. Work E 100 h O h S, will be identified. Fri 6/23/06 Work Ovt. Work E 100 h O h	Mon 7/31/06 3aseline Work Act. Work 0 h 0 h Mon 7/31/06 3aseline Work Act. Work	\$0.00 Rem. Work 100 h	\$0.00	\$0.00	\$0.00
.5.6.5.1	Verify Function of New Features - Univ	Fri 6/23/06 Work Ovt. Work E 100 h O h S, will be identified. Fri 6/23/06 Work Ovt. Work E 100 h O h	Mon 7/31/06 3aseline Work Act. Work 0 h 0 h Mon 7/31/06 3aseline Work Act. Work	\$0.00 Rem. Work 100 h	\$0.00	\$0.00	\$0.00
5.6.5.1	Verify Function of New Features - Univ ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Notes Verify function of new features: trigger bit expansion, etc.	Fri 6/23/06 Work Ovt. Work E 100 h O h S, will be identified. Fri 6/23/06 Work Ovt. Work E 100 h O h	Mon 7/31/06 3aseline Work Act. Work 0 h 0 h Mon 7/31/06 3aseline Work Act. Work	\$0.00 Rem. Work 100 h	\$0.00	\$0.00	\$0.00
5.6.5.1	Verify Function of New Features - Univ ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost Notes Verify function of new features: trigger bit expansion, etc.	Fri 6/23/06 Work Ovt. Work E 100 h O h S, will be identified. Fri 6/23/06 Work Ovt. Work E 100 h O h	Mon 7/31/06 Saseline Work Act. Work Oh Oh Mon 7/31/06 Baseline Work Act. Work	\$0.00 Rem. Work 100 h	\$0.00	\$0.00	\$0.00

WBS Definition
Milestone- L1 Cal Trig is ready for Runllb physics. Note sliding window studies needn't be completed.

WBS	Name	Start	Finish	M&S EQ	M&S Labor	FNAL Labor	Total Cost	
"L2 Beta	ready for Runllb Physics" continued Notes							
	7000							
1.5.6.6	L2STT Physics Commissioning	Fri 6/23/06	Mon 7/31/06	\$0.00	\$0.00	\$0.00	\$0.00	
	Notes WBS Definition-							
	This summary task completes physics commissioning of the L2STT for Runllb physics	s resumption.						
1.5.6.6.1	Verify STT Track Fitting - Univ ID Resource Name Units Cost Baseline Cost Act. Cost Rem	Fri 6/23/06 a. Cost Work Ovt. Work	Mon 7/31/06 Baseline Work Act. Work	\$0.00 Rem. Work	\$0.00	\$0.00	\$0.00	
	12 PhysicistU 150% \$0.00 \$0.00 \$0.00	\$0.00 300 h 0 h	0 h 0 h	300 h				
	Notes WBS Definition-							
	Verify function of track fitting code.							
	Labor BOE-When University/Fermilab division of labor known, specific personnel, Unit	versities, will be identified.						
	M&S BOE-							
	NA							
1.5.6.6.2	Verify STT Track Fitting - FNAL	Fri 6/23/06	Mon 7/31/06	\$0.00	\$0.00	\$0.00	\$0.00	
1.5.0.0.2	ID Resource Name Units Cost Baseline Cost Act. Cost Rem	n. Cost Work Ovt. Work	Baseline Work Act. Work	Rem. Work	ψ0.00	ψ0.00	ψ0.00	
	11 PhysicistF 150% \$0.00 \$0.00 \$0.00	\$0.00 300 h 0 h	0 h 0 h	300 h				
	Notes							
	Notes WBS Definition-							
	WBS Definition- Verify function of track fitting code.							
	WBS Definition-	versities, will be identified.						
	WBS Definition- Verify function of track fitting code. Labor BOE-When University/Fermilab division of labor known, specific personnel, University/Fermilab division of labor known, specific personnel, University/Fermilab	versities, will be identified.						
	WBS Definition- Verify function of track fitting code. Labor BOE-When University/Fermilab division of labor known, specific personnel, University/Fermilab division of labor known, specific personnel, University/Fermilab	versities, will be identified.						
1.5.6.6.3	WBS Definition- Verify function of track fitting code. Labor BOE-When University/Fermilab division of labor known, specific personnel, Unit M&S BOE- NA	versities, will be identified. Mon 7/31/06	Mon 7/31/06	\$0.00	\$0.00	\$0.00	\$0.00	
1.5.6.6.3	WBS Definition- Verify function of track fitting code. Labor BOE-When University/Fermilab division of labor known, specific personnel, Uni M&S BOE- NA L2 STT ready for Runllb Physics Notes		Mon 7/31/06	\$0.00	\$0.00	\$0.00	\$0.00	
1.5.6.6.3	WBS Definition- Verify function of track fitting code. Labor BOE-When University/Fermilab division of labor known, specific personnel, Uni M&S BOE- NA L2 STT ready for Runllb Physics	Mon 7/31/06	Mon 7/31/06	\$0.00	\$0.00	\$0.00	\$0.00	
	WBS Definition- Verify function of track fitting code. Labor BOE-When University/Fermilab division of labor known, specific personnel, University/Fermilab divis	Mon 7/31/06	Mon 7/31/06	\$0.00	\$0.00	\$0.00	\$0.00	
	WBS Definition- Verify function of track fitting code. Labor BOE-When University/Fermilab division of labor known, specific personnel, Uni M&S BOE- NA L2 STT ready for Runllb Physics Notes WBS Definition Milestone- L1 Cal Trig is ready for Runllb physics. Note sliding window studies needni Runllb Physics Commissioning Completed	Mon 7/31/06	Mon 7/31/06 Wed 8/9/06	\$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	
	WBS Definition- Verify function of track fitting code. Labor BOE-When University/Fermilab division of labor known, specific personnel, University/Fermilab divis	Mon 7/31/06 't be completed. Wed 8/9/06		·	·	·		
1.5.7	WBS Definition- Verify function of track fitting code. Labor BOE-When University/Fermilab division of labor known, specific personnel, University M&S BOE- Notes WBS Definition Notes WBS Definition Milestone-Run Ilb Detector is ready for high luminosity data taking with full trigger list.	Mon 7/31/06 "t be completed. Wed 8/9/06	Wed 8/9/06	\$0.00	\$0.00	\$0.00	\$0.00	
1.5.7	WBS Definition- Verify function of track fitting code. Labor BOE-When University/Fermilab division of labor known, specific personnel, University/Fermilab divis	Mon 7/31/06 't be completed. Wed 8/9/06		·	·	·		
1.5.7	WBS Definition Verify function of track fitting code. Labor BOE-When University/Fermilab division of labor known, specific personnel, University M&S BOE-NA **L2 STT ready for Runllb Physics **WBS Definition** Milestone- L1 Cal Trig is ready for Runllb physics. Note sliding window studies neednoted **Notes** **WBS Definition** **Moless** WBS Definition** Milestone-Run Ilb Detector is ready for high luminosity data taking with full trigger list. **Runllb Trigger List**	Mon 7/31/06 "t be completed. Wed 8/9/06	Wed 8/9/06	\$0.00	\$0.00	\$0.00	\$0.00	
1.5.7	WBS Definition- Verify function of track fitting code. Labor BOE-When University/Fermilab division of labor known, specific personnel, University Mass BOE- Na L2 STT ready for Runllb Physics Notes WBS Definition Milestone- L1 Cal Trig is ready for Runllb physics. Note sliding window studies neednively modes WBS Definition Milestone-Run Ilb Detector is ready for high luminosity data taking with full trigger list. Runllb Trigger List Notes WBS Definition- Develop Trigger List(s) for various expected luminosities. Labor BOE-	Mon 7/31/06 "t be completed. Wed 8/9/06	Wed 8/9/06	\$0.00	\$0.00	\$0.00	\$0.00	
1.5.6.6.3	WBS Definition- Verify function of track fitting code. Labor BOE-When University/Fermilab division of labor known, specific personnel, University M&S BOE- NA L2 STT ready for Runllb Physics WBS Definition Milestone- L1 Cal Trig is ready for Runllb physics. Note sliding window studies neednown in the state of the	Mon 7/31/06 "t be completed. Wed 8/9/06	Wed 8/9/06	\$0.00	\$0.00	\$0.00	\$0.00	
1.5.7	WBS Definition- Verify function of track fitting code. Labor BOE-When University/Fermilab division of labor known, specific personnel, University Mass BOE- Na L2 STT ready for Runllb Physics Notes WBS Definition Milestone- L1 Cal Trig is ready for Runllb physics. Note sliding window studies neednively modes WBS Definition Milestone-Run Ilb Detector is ready for high luminosity data taking with full trigger list. Runllb Trigger List Notes WBS Definition- Develop Trigger List(s) for various expected luminosities. Labor BOE-	Mon 7/31/06 "t be completed. Wed 8/9/06	Wed 8/9/06	\$0.00	\$0.00	\$0.00	\$0.00	
1.5.7	WBS Definition- Verify function of track fitting code. Labor BOE-When University/Fermilab division of labor known, specific personnel, University M&S BOE- Notes WBS Definition Milestone-L1 Cal Trig is ready for Runllb physics. Note sliding window studies neednively management of the state of the second studies of the second studies of the second state of the second	Mon 7/31/06 It be completed. Wed 8/9/06 Sun 5/15/05	Wed 8/9/06 Mon 8/7/06	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00	
1.5.7	WBS Definition- Verify function of track fitting code. Labor BOE-When University/Fermilab division of labor known, specific personnel, Unit M&S BOE-NA L2 STT ready for Runllb Physics Notes WBS Definition Milestone- L1 Cal Trig is ready for Runllb physics. Note sliding window studies needn't Runllb Physics Commissioning Completed Notes WBS Definition Milestone-Run Ilb Detector is ready for high luminosity data taking with full trigger list. Runllb Trigger List Notes WBS Definition- Develop Trigger List(s) for various expected luminosities. Labor BOE- One expert per subsystem. M&S BOE-	Mon 7/31/06 "t be completed. Wed 8/9/06	Wed 8/9/06	\$0.00	\$0.00	\$0.00	\$0.00	

WBS	Name	Start	Finish	M&S EQ	M&S Labor	FNAL Labor	Total Cost	
1.5.8.2	Strawman Runllb Trigger List	Mon 6/13/05	Mon 6/13/05	\$0.00	\$0.00	\$0.00	\$0.00	
	Notes WBS Definition- Milestone - V15 Runllb Trigger List released							
	Millestolle - V13 Kultilib Higgel Elst feleased							
1.5.8.3	V15 Trigger Menu and DataBase Infrastructure	Thu 9/15/05	Thu 9/15/05	\$0.00	\$0.00	\$0.00	\$0.00	
	ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost 11 PhysicistF 300% \$0.00 \$0.00 \$0.00 \$0.00		Baseline Work Act. Work 0 h 0 h	Rem. Work 0 h				
	Notes							
	WBS Definition Milestone - First full V15 trigger menu and associated trigger DB infrastructure released							
1.5.8.4	V15 Trigger List Parsed by Coor and in DB	Tue 11/1/05	Tue 11/1/05	\$0.00	\$0.00	\$0.00	\$0.00	
	ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost 12 PhysicistU 300% \$0.00 \$0.00 \$0.00 \$0.00		Baseline Work Act. Work 0 h 0 h	Rem. Work 0 h				
	Notes WBS Definition-							
	Incorporate L3 triggers.							
	Labor BOE- One expert per subsystem. When University/Fermilab division of labor known, specific personal content of the conten	onnel, Universities, will be ider	tified.					
		,,						
	M&S BOE- NA							
1.5.8.5	Verify V15 Trigger for High Luminosity - FNAL	Fri 6/23/06	Mon 8/7/06	\$0.00	\$0.00	\$0.00	\$0.00	
	ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost 11 PhysicistF 200% \$0.00 \$0.00 \$0.00 \$0.00		Baseline Work Act. Work 0 h 0 h	Rem. Work 480 h				
	Notes WBS Definition-							
	Verify function of V15 Trigger at increasing luminosity							
	Labor BOE-							
	M&S BOE- NA							
1.5.8.6	Verify V15 Trigger for High Luminosity - Univ	Fri 6/23/06	Mon 8/7/06	\$0.00	\$0.00	\$0.00	\$0.00	
	ID Resource Name Units Cost Baseline Cost Act. Cost Rem. Cost	Work Ovt. Work	Baseline Work Act. Work	Rem. Work	ψο.σσ	ψ0.00	Ψ0.00	
	12 PhysicistU 400% \$0.00 \$0.00 \$0.00 \$0.0 Notes	0 960 h 0 h	0 h 0 h	960 h				
	WBS Definition- Verify function of V15 Trigger at increasing luminosity							
	Labor BOE-							
	M&S BOE-							
	NA							
1.5.8.7	V15 Trigger Ready for Runllb Physics	Mon 8/7/06	Mon 8/7/06	\$0.00	\$0.00	\$0.00	\$0.00	
	Notes WBS Definition							
	Milestone- RUnllb Trigger list is ready for high luminosity running of fully upgraded detector.							
450	Do Bassis for Burelli, Blassi	M- 4 0/0/00	W 1 0/0/00	# 2.22	60.00	***	***	
1.5.9	D0 Ready for Runllb Physics Notes	Wed 8/9/06	Wed 8/9/06	\$0.00	\$0.00	\$0.00	\$0.00	
	WBS Definition Milestone- RUnIIb Upgrade of D0 Detector Complete and High Luminsoity Physics data is I	ogging to tape via competent t	rigger list.					
		-55g to tape via compotent						
							-	